PROCESS AND OUTCOME ACCOUNTABILITY STRUCTURES IN AMATEUR FIGURE SKATING

Caroline Hao

TC 660H/TC 359T
Plan II Honors Program
The University of Texas at Austin

May 11, 2020

_____

Shefali Patil
Management
Supervising Professor

_____

Kimberly Beckwith
Sports History
Second Reader

ABSTRACT

Author: Caroline Hao

Title: Process and outcome accountability structures in amateur figure skating

Supervising Professors: Shefali Patil, Kimberly Beckwith

This paper will investigate the impacts of process and outcome accountability on the behavior of organizational stakeholders in order to reconcile conflicting findings regarding the efficacy of each. I propose a modifying dimension of the position of a given stakeholder to the organization. My first hypothesis is that process accountability structures compared to outcome accountability structures will enhance training mastery for internal stakeholders; my second hypothesis is that process accountability will decrease the attraction of the occupation for external stakeholders compared to outcome accountability. My method of investigation is an archival documentation of literature around international competitive figure skating following the transition from an outcome accountability judging system (6.0 system) to a process accountability system (International Judging System). My work contributes to prior research by providing a mediating framework through which to understand previous findings. Ultimately, my findings may serve organizational leaders seeking practical guidelines around constructing accountability structures for their organizations.

INTRODUCTION

In a world governed by organizations, individuals are connected through accountability structures. These structures serve as the skeletons compartmentalizing and defining operations of the organizations they support. A well-crafted accountability system can be powerful in uniting people toward a common purpose. Conversely, a system out of touch with an organization's expressed values will derail the organization from achieving its goals. Thus, it is essential for organizational leaders to fully understand the range of possibilities for the accountability structure they design to ensure that it is in keeping with the guiding principles of their overarching organization.

In this paper, I will investigate the impacts of the two broad types of accountability structures, process accountability (otherwise known as "behavioral control") and outcome accountability (otherwise known as "market control") on the behaviors of an organization's stakeholders. Whereas the first, process accountability requires decision-makers to justify the process steps toward coming to a decision, the latter, outcome accountability, requires decision makers to justify only the outcome of their decisions. The field of research available provides conflicting evidence on the benefits and detriments of each type of accountability structure.

The purpose of my research is to reconcile the conflicting findings with regards to the outcomes of these different accountability structures. I argue that one way to reconcile these findings is to specify whether the outcome of interest is internal to the organization (e.g. employee learning) or external (e.g. occupational attraction to stakeholders). My first hypothesis is that process accountability structures will enhance internal outcomes, specifically employees'

learning mastery, compared to outcome accountability structures. Conversely, my second hypothesis is that process accountability structures will also impede external outcomes, specifically by decreasing external stakeholder interest in the profession, compared to outcome accountability structures.

In order to test these hypotheses, I will be conducting a case study in international competitive figure skating. Figure skating provides a rich context of both feats of athletic ability balanced against artistic expression – both of which much be captured through an evaluative structure. In this context, the International Judging System (IJS) replaced the 6.0 judging system in 2004 as the evaluation system at all international competitions. Whereas the 6.0 judging system is an outcome accountability structure, requiring a holistic judgement of the cumulative effect of a skater's performance, the IJS is a process accountability structure that provides many guidelines holding skaters accountable to the quality of individual elements they execute within a program. This dichotomy will allow me to compare the era prior and post the implementation of a process accountability system in international figure skating.

Both my hypotheses will be investigated through archival documentation. More specifically, hypothesis 1 (with regards to learning mastery) will be explored through skating insiders' statements on training and the change in training-related rules implemented by the US Figure Skating Association (the US national governing body of figure skating) under the IJS versus the 6.0 system. Hypothesis 2 (with regards to external image and attraction) will be tested by examining interest in the sport over time from the perspective of both skating insiders (published statements) and external stakeholders: spectators (sport popularity polls), the media (*New York Times* article archives), as well as prospective competitors (USFS membership numbers).

Overall, my research makes the following theoretical contributions: First it provides a framework to reconcile conflicting effects of accountability structures uncovered through existing research -- that the directionality of impact on stakeholders depends on whether the stakeholder is internal or external to the organization. Second, it provides a longitudinal view of the effects of process and outcome accountability structures, which virtually no previous experimental research has covered (Chang et al. 2017). Third, my research provides a practical framework that managers may use to choose the proper accountability structure to serve their organizational goals.

Accountability Structures

Accountability structures are designed to tie an organization together. They help answer the question of "who answers to whom for what", thus aligning people's incentives to match organizational goals (Tetlock 1985). Understanding these accountability structures is important because they serve as the underlying backbone to the social and organizational contexts in which people make decisions (Tetlock 1985). Designing an accountability system to augment the performance of its people is a prerequisite to operating an organization successfully.

Designing an accountability system can be a complex endeavor because holding people accountable tends to influence their cognitive processing, impacting "how we think beyond simply what we think" (Frink et al. 2008). This is because accountability structures direct people where to focus their attention, which can affect how they process information (Simonson & Nye 1992). This idea that people change their behavior to conform to evaluation systems is known as "reactivity" (Espeland & Sauder 2007). Members' reactivity can be beneficial to an organization if the accountability system aligns well with the organization's purpose and values. However,

these systems must be carefully designed and constructed because people's behaviors may conform to the accountability system in ways counterproductive to organizational goals.

There are many ways to categorize accountability structures; this paper will focus on two main categories: process and outcome accountability.

Under process accountability, decision makers are held accountable for the procedures they conduct, often having to justify their choices in the process of making decisions. The evaluative cultures associated with process accountability tend to be more standardized as decision makers use specific evaluation rules to guide their actions (Liberman et al. 1999). Standardized behavior is especially important in environments that require high degrees of worker precision. An example would be an emergency medical services provider being held accountable for following every step of a checklist on standard operating procedures, rather than for simply the patient's eventual health outcome.

Organizations typically choose to use a process accountability system in order to codify their decision-making practices (Sutcliffe & McNamara 2001). By formalizing the decision-making process, organizations can exploit knowledge routines to ensure that best practices are reliably followed (Hackman & Wageman 1995). In essence, process accountability systems allow managers to explicitly convey what employees should do to achieve results (Anderson & Oliver 1987). In the case of the emergency medical services provider, a process accountability system is a practical choice because it is important for service providers to standardize procedures as much as possible to ensure that best practices are being followed in the care for each patient.

The corresponding drawback to process accountability is that all newcomers to the organization are indoctrinated into the standard procedure, which is taken for granted as "the

way things are done" (Berger and Luckmann 1966). Employees become unlikely to innovate at the expense of deviating from the codified best practice. The result could be excessive conformity to practices that become less and less relevant as the needs of the organization change. Further, the more ingrained these practices are to the organizational culture, the more resistant incumbents may be to change, making the organization all the less adaptable. This result could be problematic for modern corporations as Keller and Price have identified that "innovation and change have replaced scale and stability as the key drivers of firm success" (2011).

Under outcome accountability, decision makers are evaluated on the results of their actions, without attention paid to how they achieved those results. Within these structures, decision makers are given much more flexibility on the approaches they choose to achieve their desired outcomes. This can be appealing to employees who enjoy the intellectual challenge of choosing their own work processes. An example of outcome accountability would be a trader held accountable only to their returns on investments, rather than the rationale behind their decisions to buy or sell specific assets. The trader would be left to his own devices to determine his investment strategies.

Organizations may choose to use outcome accountability systems if there are many factors that could lead to a good outcome, and as a result, it becomes difficult to parse out a standard set of best practices (Anderson & Oliver 1987). Outcome accountability systems provide employees with the flexibility to use many different potential processes to accomplish the same goal (Patil & Tetlock 2014). As a result, employees have the opportunity to employ greater creativity in accomplishing their goals, simultaneously driving the discovery of more innovative solutions.

The corresponding drawback to outcome accountability is that employees choose whichever procedure they deem best in achieving optimal outcomes, which makes it difficult to identify best practices to codify them elsewhere in the organization (Patil, Vieder, Tetlock 2014). Furthermore, deviating excessively from established best practices can be problematic to an organization when the established routines do a reasonable job of capturing the key features of the performance task (Arkes, Dawes, & Christensen 1986). The danger is that in failing to strictly codify best practices into the evaluation system, organization run the risk of encouraging inappropriate deviation from these best practices.

Literature Review

The field of research available provides conflicting evidence on the benefits and detriments of each type of accountability structure.

Many experiments conducted within a laboratory setting yielded overwhelmingly positive results for process accountability tests compared to those of outcome accountability tests. Process accountability is often found to yield more analytic decision-making with less reliance on heuristic approaches (McAllister, Mitchell, & Beach 1979; Chaiken 1980; Rozelle & Baxter 1981). Further, decision makers evaluate more information and expend greater effort in the decision-making process (Ford & Weldon 1981; Ashton 1992; Siegel-Jacobs & Yates 1996; Chang et al.1997; Asare et al. 2000; Brtek & Motowidlo 2002; Slaughter et al. 2006; Dalla Via, Perego, van Rinsum 2019). These factors contribute to a greater consistency in decision-maker performance (Hagafors & Brehmer 1983; Johnson & Kaplan 1991; Ashton 1992; DeZoort et al. 2006).

Other studies have found that process accountability systems are only effective in certain contexts. For example, prior research indicates that process accountability has had a more

pronounced effect improving the performance of novice decision-makers compared to an insignificant effect on those experienced in the field (Kennedy 1993, Kim & Trotman 2015). This result is fairly intuitive given that process accountability is used as a tool to standardize best practices (Sutcliffe & McNamara 2001). Novice decision-makers without substantial experience with best practices would benefit from process accountability rules as a means of knowledge acquisition.

Research over outcome accountability had uncovered that it improves performance in high complexity tasks. Characteristics of high complexity tasks include configural evaluation (evaluating patterns of interactions between elements as opposed to evaluating all factors additively) (de Langhe et al. 2011) and uncertain outcomes unlikely to be identified through more information processing (Liu 2015, Harris et al. 2009). In configural evaluation, when interaction effects make it difficult to parse out a standard evaluation procedure, outcome accountability provides employees the flexibility necessary to accomplish their tasks (Anderson & Oliver 1987, Patil & Tetlock 2014). Outcome accountability has also been found to improve the creativity of generated ideas (Hausser et al. 2017). In tackling uncertain situations, outcome accountability affords managers greater flexibility to adjust goals to reflect changing organizational needs (Harris et al. 2009).

Table 1. Experimental studies on process and outcome accountability

Article	PA/OA	Findings	Experimental Structure
McAllister, Mitchell, and Beach (1979)	PA	More analytic (less reliance on heuristic) strategies in decision-making	Defended decisions on market potential for sporting goods
Chaiken (1980)	PA	Employed systematic processing strategies; Less swayed by non-analytic factors	Anticipate discussion on interview decision-making process
Ford and Weldon (1981)	PA	Likelier to store and more thoroughly review all relevant info	Evaluated candidates for position and asked for reasoning behind decisions
Rozelle and Baxter (1981)	PA	More reliable evaluations (less subject to personal idiosyncrasies)	Believed committee evaluated interview rationales
Hagafors and Brehmer (1983)	PA	Greater consistency and analytic processing in low task predictability situations	Justified reasons for predictions
Johnson and Kaplan (1991)	PA	Increased consistency of results (auditor consensus)	Auditor justified decisions in inventory obsolescence exercises
Ashton (1992)	PA	Greater use of available evidence; Greater accuracy and consistency	Auditors justified industrial bond predictions
Simonson and Nye (1992)	PA	No evidence for greater consistency across participants	Justified choices in sunk cost problem
Henderson and Lee (1992)	PA/OA	PA positively affects project outcomes; OA insignificant results	
Kennedy (1993)	PA	Improved novice bankruptcy predictions, no effect on auditors' judgements	Justified reasons for predictions
Bonner and Walker (1994)	OA	Outcome feedback insufficient for knowledge acquisition; require process rules in addition	Auditors provided with combos of instructions and feedback
Siegel-Jacobs and Yates (1996)	PA/OA	PA increased complexity of thinking: took more info into account, beneficial if info is relevant. Greater variability in OA performance	Interviewed on how judgements made vs. Prize for accurate judgements
Aulakh et al. (1996)	OA	Negative to insignificant impact on performance	
Chang et al. (1997)	PA	Increased effort but not performance	Students given problem solving tasks and asked to justify choices
Tan and Kao (1999)	OA	No effect on performance on low-complexity tasks, improved high complexity task performance	Auditors told work would be reviewed for accuracy;
Asare et al. (2000)	PA	More effort expended in testing (increased breadth of tests, more errors tested)	Auditors justified gross margin testing
Brtek and Motowidlo (2002)	PA/OA	PA increased accuracy via attentiveness to information; OA lowered interview impression validity	Justified process of evaluating employee interviews vs. held accountable to supervisor ratings

Bonner et al. (2002)	PA/OA	PA mixed results; OA negative/insignificant effects on outcome	
Kennedy (1993)	PA	Improved novice performance but not professional auditors'	Audit managers and MBA students justified bankruptcy predictions
Klein et al. (2006)	PA/OA	PA positively affects project outcomes; OA insignificant results	
DeZoort et al. (2006)	PA	Improves effort and consistency	
Slaughter et al. (2006)	PA/OA	Decoy effect stronger under PA because more information taken into account	Wrote short essay explaining decision strategies vs. decisions compared against "real" decisions of organization
Harris et al. (2009)	OA	Effective in uncertain environments: allow for balance of control and emergence	
Tiwana and Keil (2010)	PA/OA	PA insignificant impact on performance; OA positive impact on performance	
Gopal and Gosain (2010)	PA/OA	PA insignificant impact on performance; OA slight positive impact on performance	Controls varied across Indian software projects; Outcomes evaluated on product quality and project efficiency
de Langhe et al. (2011)	PA/OA	Process accountability superior when cues have elemental effects on outcome (when one-time eval of multiple factors), but outcome accountability superior when cues have configural effects on outcome (when must draw patterns from long-term memory)	Evaluated predictions based on judgement strategy vs. accuracy
Chua et al. (2012)	PA/OA	OA more effective when desired behavior is unclear in complex cases	
Kreutzer et al. (2015)	PA/OA	OA provides flexibility and motivation due to discretion to choose path to achieving goals	
Liu (2015)	PA/OA	OA more effective in highly complex cases	Compare outcomes of IT project with behavioral vs. outcome control systems
Kim & Trotman (2015)	PA/OA	Novice performance greater gains than experienced under PA, greater professional skepticism under PA	Manipulated PA vs. OA & novice vs. experienced; Professional skepticism measured in auditing exercise
Hausser, Frisch, Wanzel, Schulz-Hardt (2017)	PA/OA	PA longer processing time, less creative ideas; OA less ideas, less unique ideas	Idea generation activity to students primed to process or outcome focus
Dalla Via, Perego, van Rinsum (2019)	PA/OA	PA stimulates greater search efforts and enhances process efficiency	Students make decisions as retail managers; Evaluated on decision quality vs. performance

In order to make sense of the plethora of literature associating various measures of organizational effectiveness to each accountability system, researchers have established conceptual frameworks contextualizing these measures along other dimensions that may mediate accountability effects. One such foundational model was established by Quinn & Rohrbaugh, who surveyed a large group of experts to systematically classify indices of organizational effectiveness selected from a review of relevant literature (1983).

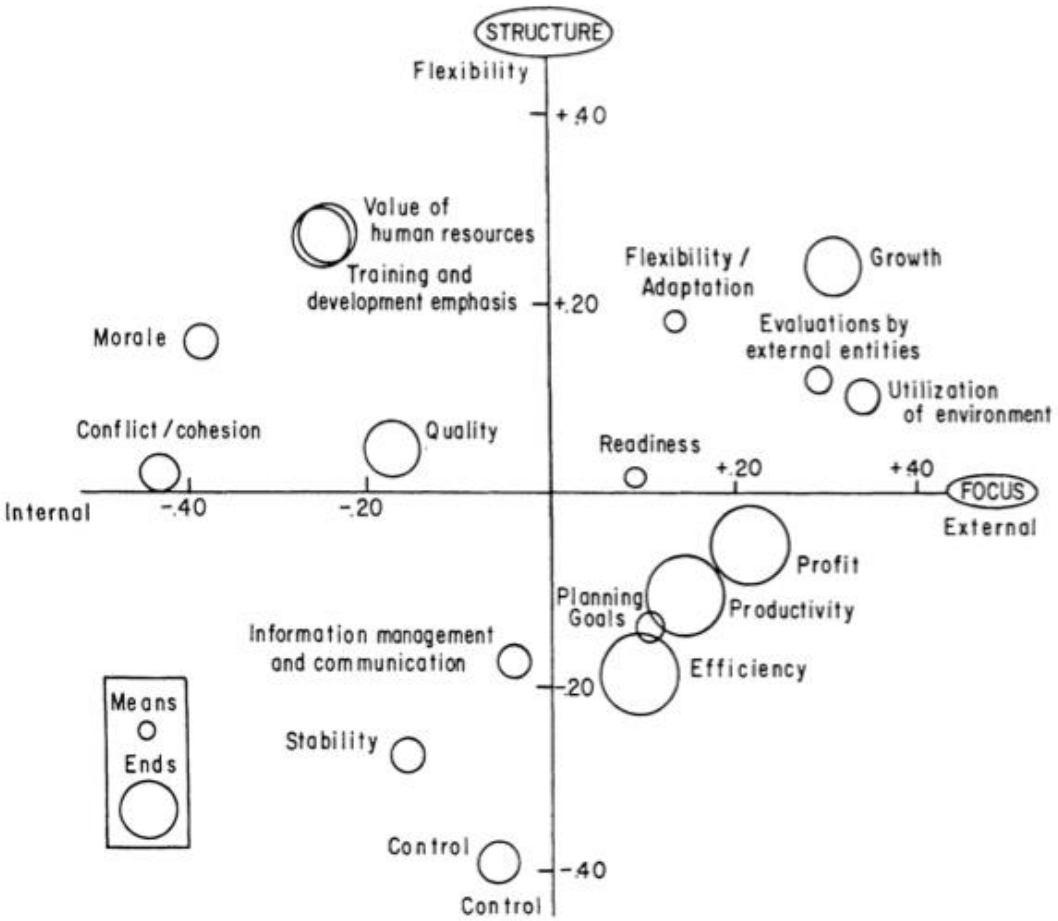

Figure 1 Quinn & Rohrbaugh's organizational effectiveness model.

The resulting model (Figure 1) contextualizes organizational effectiveness indices on a two by two matrix. One dimension is the type of accountability on a spectrum from formal

(process accountability) to flexible (outcome accountability). The other dimension is an internal, individual focus versus an external, organizational-oriented focus. The resulting spatial model provides a framework through which to classify the strengths of the four types of organizations identified. For example, a flexible organization with an external focus would be highly adaptable and more favorable to evaluations by external entities, whereas a less flexible organization with an internal focus would be stable and have strong channels for information management. This type of model provides clarifying contexts through which to understand the many impacts of organizational control structures.

To motivate accountability structure research, work has also been done to understand how accountability structures have been implemented in real-world organizations. Theodore Porter has identified a broad trend across many fields reflecting a desire for quantitative authority involving explicit, standardized rules in order to eliminate discretion, bias, and subjectivity (1995). This is because the collective understanding of institutional legitimacy has become increasingly linked to strict accountability (Power 2003). However, as briefly touched upon above, different accountability structures can have a range of impacts on the behaviors of the people they govern. In many cases, an outcome accountability system may be more aligned with institutional values and purposes than a strict, process accountability system. Thus, it is important to thoroughly understand the consequences of different kinds of accountability. In other words, more research needs to be done into the mediating contexts in which process accountability systems perform better than outcome accountability and vice versa.

Theoretical Development

The goal of this paper is to reconcile the conflicting findings with regards to the impacts of different accountability structures and to determine the most suitable contexts for each. I build

upon Quinn and Rohrbaugh's spatial model of organizational effectiveness to argue that an effectual way to reconcile these findings is to specify whether the outcome of interest is internal to the organization (e.g., employee learning) or external (e.g., occupational attraction to stakeholders).

I hypothesize that process accountability enhances learning mastery within an organization. Learning mastery (also referred to as training mastery) is a concept capturing an employee's growth in "learning the ropes" or progressing toward mastering the skills required to perform successfully in a role. As established through prior research, process accountability structures are associated with consistency through the codification of standard best practices (Hackman & Wageman 1995). Eliminating uncertainty over what should be done allows employees to focus on accomplishing their goals (Reyt & Wiesenfeld 2015). This state of certainty, known as a lower construal state, enhances employee learning toward mastery of a specific task (Wiesenfeld & Gollwitzer 1999). This feature of process accountability structures likely contributes to experimental findings that process accountability improves the performance of novices in training more so than for more experienced employees (Kennedy 1993, Kim & Trotman 2015). Further, practice with solely outcome feedback has not been found to assist in employees' knowledge acquisition unless it is preceded by detailed instructions (Bonner & Walker 1994). Thus, I suggest:

Hypothesis 1: Process accountability structures will enhance internal outcomes, specifically employees' learning mastery, compared to outcome accountability structures.

Conversely, I hypothesize that process accountability lowers occupational attraction to stakeholders. Occupational attraction encompasses an organization's ability to garner the interest of outsiders and engage them in its operations. Occupational attraction is essential to any

organization because organizations depend on their ability to attract new talent to continue to operate and grow (Finnegan 2010). A key factor to occupational attraction is the level of empowerment employees feel in making crucial decisions in their own work (Batra 2017). Process accountability tends to be mechanistic, emphasizing predictable performance (Ouchi 1980, Das & Teng 1998). Definitionally, it provides a scripted approach from which employees do not have much room to deviate. Conversely, outcome accountability defines end goals while allowing employees a high level of abstraction as to how to achieve them (Liberman et al. 2001). This cognitive abstraction allows decision-makers the space to generate many hypothetical alternatives, enabling exploration (Gavetti et al. 2005, Trope & Liberman 2013). This is likely why outcome accountability systems have been found to improve the creativity of decision makers' ideas (Hausser et al. 2017). In addition, the higher degree of discretion employees have in choosing their own path under outcome accountability has been associated with a greater degree of employee motivation (Kreutzer et al. 2015). Thus, I suggest:

Hypothesis 2: Process accountability structures will impede external outcomes, specifically by decreasing external stakeholder interest in the profession, compared to outcome accountability structures.

Introduction to the Case Study: Figure Skating Judging Systems

In order to test these hypotheses, I will be using international amateur figure skating as a case study through which to evaluate stakeholders' behavioral responses to different accountability structures. International sport is an environment that has long since recognized the importance of constructing judging structures to reflect "rationally-grounded principles about the nature and purpose of the sport" (Dixon 2003). This is because success in sports is much more explicitly tied to the rules of the game than in other organizational contexts (e.g. start-ups that

strive for success in a cloud of market uncertainties). The willingness of participants to engage with a sport depends on the understanding that officials adjudicate athlete performances in a way fair and accurate to the mutually agreed upon standards of the sport (Russell 1997). At the height of international competition, athletes have each displayed a deep understanding of and substantial effort toward operating within the constraints of their respective judging structures to achieve world-class levels of performance. Participants here are more directly influenced by judging structures compared to those in other contexts who may be motivated to perform by a range of diverse factors. Thus, competitive international sports provide natural contexts through which to study how accountability structures directly shape stakeholders' performance and behavior.

International figure skating was chosen as the specific sports context because the sport has undergone a shift in recent history from an outcome accountability to a process accountability judging system. Thus, it provides a convenient comparison through which to evaluate how stakeholders' behaviors have changed in response. Furthermore, figure skating is a particularly rich context because the sport involves evaluating both strictly codified technical feats as well as more qualitative, creative components (Findlay 2004). Thus, the figure skating judging system reflects a complex range of evaluative tasks that parallel those that evaluators may face in other evaluative contexts.

Historical Context of the Sport

Figure skating has evolved substantially from its earliest days. Skating had been used as a form of transportation by people for thousands of years. However, the beginning of the sport in its competitive form took place in Europe in the mid-19th century (Hanley 2000). This is when steel-bladed skates were introduced, which were strong enough for skaters to perform intricate

twists and turns on ice, also known as figures. These figures were the foundational technical elements of figure skating; many manuals were written at the time describing hundreds of possible patterns and the standards for excellence of each one (Hines 2015). The earliest competitions in the 1880s featured a combination of these skating patterns with ballet moves. Though figure skating has evolved dramatically from these early days, its heart of objectively evaluated technical feats combined with subjective artistic expression still a core feature of the sport.

Skating first formalized with the founding of the London Skating Club in 1830 and the New Brunswick skating club in 1833 (Hines 2006). These clubs in Europe and North America became hotbeds that drove major technical advancements. It was in these subsequent years that many new figures were invented and documented (Hines 2015). Figure skating came under an international organization called the International Skating Union (ISU) in 1892 (Hanley 2000). Soon thereafter, figure skating became an Olympic sport in 1896. In their earliest iterations, international skating competitions were made of two events: compulsory figures that showcased a skater's mastery of standard technical elements and free skating that was a more flexible showcase of a skater's creativity and artistry (Hines 2015).

Figure 2 Compulsory figure, Britannica

Throughout the 20th century, skating elements became increasingly formalized. Jumps and spins that had previously been captured as elements within figures, became competitive components themselves (Hines 2006). The split of jump and spin elements from figures allowed

for Pair Skating and Ice Dancing to become separate competitive divisions in the late 20th century. Ice Dancing remained grounded in traditional figures and drew stylistic inspiration from popular ballroom dances of the time, such as waltz and polka. Pair Skating drew more heavily from bigger ticket jump and spin elements, which evolved into the dazzling twists and throws of today.

One of the biggest changes to the sport was the elimination of the compulsory figures event for singles and pairs skaters in 1991 (Harvey 1992). Previously, these figures had been the measure of a skater's technical prowess and made up 60 percent of a skater's final score. However, the sport eliminated figures after television ratings became indispensable to the financial health of the sport (Radnofsky 2019). Compulsory figure events, though considered important by veterans of the sport, consisted of up to eight hours of skaters drawing identical patterns across the ice. The consensus was they made for bad TV and thus, were not broadcasted. However, TV audiences would tune in only for the free skating portions of the competition and were often confused and unhappy when the best free skaters did not necessarily win overall. The ISU cut the compulsory figures event to augment the popular appeal of the sport (Harvey 1992). Instead, skating competitions were judged purely on the merits of a short program and free skate, each with a set of jump, spin, and step sequence requirements.

The elimination of compulsory figures shifted the technical focus of the sport to jumping passes (Radnofsky 2019). Though figures were difficult to execute, they did not require the same degree of raw athleticism as jumps, the most difficult of which require skaters to launch themselves 1.5 feet off the ground and spin in the air faster than the blades of a high-grade blender. The structural shift of figure skating away from compulsory figures accelerated the technical advancement of the sport. The following three decades became known as the "Quad

Revolution" as skaters competed to embed increasingly difficult jumping passes into their programs, the most challenging of which is a quadruple jump, requiring a skater to perform four revolutions in the air (Tabb 2018). In the present day, feats of athleticism have become a staying attraction of the sport as skaters continue to push the bounds of what is humanly possible.

Though the sport has evolved dramatically, figure skating has retained the spirit from its earliest days of competition. From the beginning, skating has always been a display of technical prowess in concert with performative aplomb. Capturing this balance in an evaluative structure has never been an easy task. In recent history, the ISU has had the challenge of reevaluating how to capture this balance within the confines of a new, more objective judging system.

Evolution of the Judging System

The figure skating judging system came under scrutiny after the 2002 Winter Olympic games (Roberts 2002). Jamie Sale and David Pelletier of Canada skated a flawless program that brought the stadium roaring to its feet. Sandra Bezic, NBC commentator of the event and five-time Canadian pairs champion, likewise assured of their victory announced, "Simply perfect… They did it (Associated Press 2002)!" But when the scores came up, the Russian team, Yelena Berezhnaya and Anton Sikharulidze, who committed a few mistakes in their program were awarded the gold medal instead. Within 24 hours, one judge, Marie Le Gougne of France, admitted to being pressured prior to the event to rank the Russian team over the Canadians. The revelation took the skating world by storm. The Olympic committee awarded Sale and Pelletier an Olympic gold and issued the ISU an ultimatum to rework its judging system or risk being struck from the Winter Olympics in the following cycle (Roberts 2002).

The previous judging system, known as the 6.0 system, was designed to enable judges to evaluate the overall effect of the skater's performance – an outcome accountability system. The

6.0 system is named as such for the designation of 6.0 as the perfect score. The skater receives a mark out of 6.0 for both technical merit, the quality of execution of each of the elements (jumps, spins, and steps), and artistic merit, the skater's quality of musical interpretation, performance, and originality. The theory behind the system is that judges would assign skaters points based on how close they come to presenting an ideal, holistic program. Judges' technical and artistic scores are combined to come out with an "ordinal", or the skater's rank compared to all other competitors. Each skater's ordinals from all the judges would be aggregated to determine the final placements.

Under the 6.0 system, judges have a great deal of discretion in determining the skater's point totals and placement based on their impression of the skater's holistic performance. Unfortunately, it was this level of discretion that the Olympic committee felt allowed inordinate flexibility for illegitimate judging behavior. Thus, the ISU moved towards a judging system that more strictly codified a set of standardized rules. This shift from outcome to process accountability is a textbook example of the broader trend identified by Porter where a desire to eliminate bias, and thus, discretion, motivates decision makers to move towards explicitly defined rules (1995).

The new system, known as the International Judging System (IJS), was implemented by the ISU in 2004 and provides much stricter guidelines on how each element a skater performs should be judged. Each skating component (e.g. jumps, spins, choreography, performance) is awarded a set number of points based on the quality with which the skater executes it. The ISU skating rulebook provides clear criteria on the number of points each element should be rewarded. Rather than giving the judges the ability to reflect the holistic effect of a skater's performance in his or her overall scores, the IJS serves as a checklist of parts the judge verifies in

order to determine the skater's additive score. In that sense, the ISU's shift to the IJS was a shift to a process accountability system.

Like the 6.0 system, the IJS is made up of a technical and an artistic score. The technical score evaluates the jumps, spins, and step sequences skaters perform in each of their programs. Each element a skater performs is assigned a base level of points based off the level of difficulty it takes to execute; for example, a quadruple revolution jump has a higher base value than a triple jump. From the base value, judges have the ability to assign skaters a Grade of Execution (GOE) of -5 to +5 points based on how well the skater executed the element. The ISU rulebook provides specific criteria for what a jump of each GOE level entails. For a +5 GOE designation, a jump must be "superior in all jump phases (e.g. unexpected or difficult entry phase, great height/distance, strong flow in and out and superior extension on landing)" (International Skating Union 2018). Negative GOE points are taken for mistakes such as under-rotations and unstable landings.

The artistic score (known officially as the program component score) is made up of five components: skating skills, transitions, choreography, interpretation, and performance. Each of these measures of artistic performance has its own set of criteria defined by the ISU rulebook. In essence, they capture how effortless, intricate, original, expressive, and projected a skater's performance is. These scores are given on a scale from 1 to 10 in increments of 0.25 with guidelines for what each of these scores should entail. A score of around an 8.0 is considered a world class performance.

Research Structure

In order to investigate how outcome and process accountability systems each influence the broader organizations they are instituted to govern, I will be examining the dialogue of

insiders and observers of figure skating to determine the how the 6.0 system and the IJS respectively impacted stakeholders of the sport. The 6.0 judging system is an outcome accountability structure that evaluates a skater's performance based on a holistic judgement of the cumulative effect of a skater's performance. By contrast, the IJS system is a process accountability structure that provides rigid guidelines holding skaters accountable to the quality of individual elements they execute.

In the context of amateur international figure skating, the hypotheses should be understood as follows:

Hypothesis 1: The IJS as compared to the 6.0 system codifies the standard for what is considered to be a quality program, so internal stakeholders should respond with a greater degree of training mastery as well as formalization of training structures.

A higher degree of training mastery is to be expected as it has been long since established in sports psychology that the key to expert level performance is "deliberate practice". Ericsson et al. conducted a review of a century of laboratory studies into learning and skills acquisition and concluded that effective training depends on repetitive deliberate practice informed by regular feedback. They concluded that such activities are "high on effort, and comparatively low on inherent enjoyment" (1993). The key to motivating such effective, deliberate training is "the full consciousness of the immediate object to aim at" (Martin 1953). In other words, in order to motivate deliberate practice, skaters must have a clear understanding of their immediate training goals. The strict guidelines for quality defined by the IJS should provide skaters with a clear understanding of how their performances should be improved, which should in turn, focus their training efforts toward achieving the IJS-defined standard of success.

In addition, the formalization of training should be reflected in the structural organizations built around skater training. Formalization of standards tend to beget greater formalization because formal rules require categories to be defined and taught to all participants involved (Lom 2013). The IJS was conceived with new concepts around technical mastery (e.g. the guidelines that categorize a spin as level 4 difficulty versus level 3). These concepts must be communicated to officials and coaches, and through them, to skaters. Thus, following the implementation of the IJS, I would expect to find more rigorously defined certifications and training programs for members under official skating organizations like national skating federations.

Hypothesis 2: The IJS as compared to the 6.0 system encourages standardized performances, disincentivizing originality and thereby diminishing the sport's popularity with the viewing public.

As athletes are able to derive tangible guidance from the IJS through its rigidly defined standards for success, they understandably rally to construct programs that maximize their potential point outcomes under it. After the implementation of the IJS, professors of Kinesiology, Rosengerg and Lockwood, identified its weakness as its "premium on the notion that victory is merely the sum of parts" (2005). As such, they expected skaters to construct their programs to conform to the highest standard of difficulty defined by the IJS rather than developing the "full richness and wholeness of performances". Considering much of the appeal of figure skating for spectators lies in its performance showcases "beyond pure physical accomplishment", it would be expected that homogenized performances would be a blow to the sport's popular appeal with both viewing audiences and prospective new entrants (Katz 2014).

My work will build upon a body of work (e.g. a doctorate thesis in the field of sociology by Stacy E. Lom of Northwestern University), examining international amateur figure skating as a case study to investigate evaluative cultures. Lom specifically interviewed 33 skating insiders in 2006 to determine how the shift in judging systems over the 2004 season impacted the behavior of officials, coaches, and skaters (2013). From these interviews, Lom found that the IJS aided skaters in deriving more targeted feedback from officials and competitive results and encouraged them to pursue more comprehensive training methods. However, the rigid structure of the IJS also encouraged skaters to conform to the system, which resulted in "cookie cutter" programs that emphasized technical merit and devalued artistry.

My thesis will build on upon past findings by first, expanding from a sociological focus on the effects on individuals within figure skating to a broader organizational research perspective. In addition to understanding the micro-level behavioral changes of the skaters and other individuals involved with the sport, I will evaluate the macro-level effects on both organizational formalization and the sport's popularity with external stakeholders. This more expansive view will provide metrics that will ascertain the impact of accountability systems on the performance of the occupation of figure skating as a whole.

Second, my research will provide insight into how the judging system change has influenced the sport over time. Interviews from previous research provide a snapshot into how skating insiders were responding to the shift from outcome to process accountability shortly after its implementation. I will be synthesizing results from the past couple of decades to understand how the sport has continued to adapt in response to the IJS. In doing so, I will be able to determine whether the initial responses of skaters, coaches, and officials continue to hold true to

the present day and how their impressions have changed since they have come to accept the IJS as their status quo.

Methodology

In order to investigate hypothesis one (in regard to training mastery), I will examine effects on training from both a micro and a macro perspective. On the micro-scale, I will draw from first-hand published statements from skaters, coaches, and officials to determine the impact of the judging system change at the individual level. These statements will provide an immediate perspective into how the shift from the 6.0 system to the IJS caused skating insiders to consciously change the ways they approach training. I will be comparing the responses of skaters to the judging system change during the subsequent Olympic cycle (2004-2006) to the statements made in the years at least two cycles after (2010-present), presumably after skating insiders have adjusted to operating under the IJS. This comparison will allow me to determine whether the perceived impact was consistent over time.

On the macro-scale, I will be using data from the US Figure Skating Association's annual Report of Action to determine if official skating institutions reflected the expected formalization of training procedures following the shift to the IJS. USFS is the United States' governing body for competitive figure skating. Each country represented in the ISU has its own such official governing body to oversee the development of athletes and clubs (Figure 3). These organizations would be in the most direct position to make broad structural changes to the rules around insiders of the sport. Thus, changes to the training formalization should be detectable through the actions of these governing organizations.

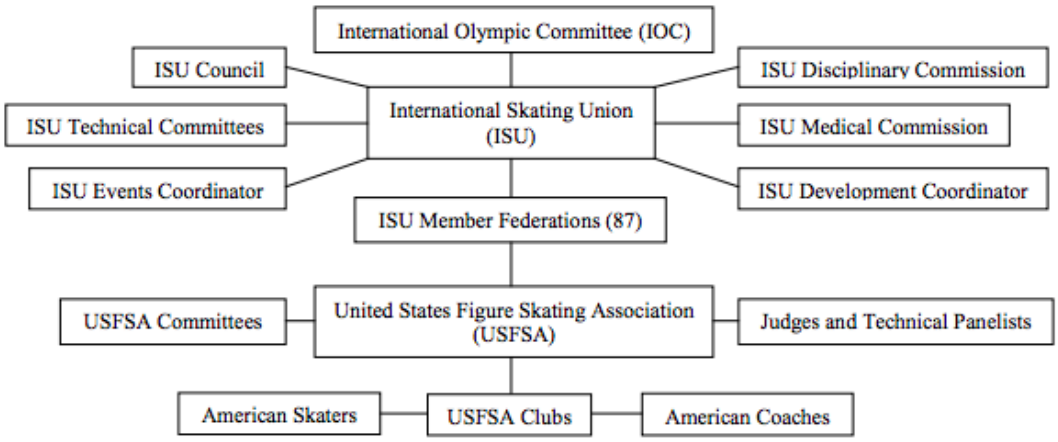

Figure 3 ISU Organizational Structure; The USFSA was the official abbreviation of the United States Figure Skating Association prior to 2007.

Each year the USFS Board of Directors publishes a report on all of its approved actions. I examine the reports from the years 1982 to 2019.[1] I take a tally of actions from each report that relate to athlete training difficulty and formalization as well as judge training (refer to Figure 4 for the types of actions classified under each of these categories). I then plot these tallies per year to determine the number of these types of actions that were passed before and after the judging system changes. The purpose of this analysis is to determine whether the judging system change correlates with more formal structural changes to training.

1) The 1982 edition was chosen as the first USFS Board of Directors report examined because it was the first of these reports available in the USFS archives.

Ath. Training Difficulty	Ath. Training Formalization	Judge Training
New test category	Clarifying rules/element guidelines (e.g. definition of a spin)	Training requirements for judges
New test level	Testing improvement task force	New trainings
Qualifying test requirements for competitions	Coaching seminars	Event review sessions
Rules increasing standards of test (e.g. additional required element)	Coach training sessions	Judge level qualifications for competitions
More difficult prerequisites to qualify for tests	Structural changes to tests (e.g. new solo track)	New judge levels
	Athlete Development Committee creation	Technical Panel Committee creation

Figure 4 USFS Combined Report of Action training mastery action classification

In order to investigate hypothesis two (in regard to the sport's attraction), I will make a similar delineation between micro and macro impacts. On the micro-scale, I will be drawing from first-hand published statements from skaters, coaches, and officials to determine their perspective on how the judging system change has impacted the performances of figure skating. I will make the same comparison between statements from 2004 to 2006 and statements made after 2010. These changes the skating insiders made are the direct causal link between the judging system shift and athlete behavior. I will also be collecting these insiders' opinions on how these changes have affected the popular appeal of the sport. Of course, these statements would be mere conjecture; the opinions of internal stakeholders would not be able to definitively capture the effects on the behavior of external stakeholders like fans and prospective entrants to the sport. However, without a direct source covering the mindsets of these external stakeholders, these insider opinions provide an educated guess on the motivations behind spectators' behavior.

In order to capture how external stakeholders have responded to the judging system change on a macro level, I draw from multiple different sources. There has been no systematic report released from US Figure Skating as to the ticket sales or attendance numbers of major skating events. Thus, to measure the popularity of the sport with the general public, I rely on information from several secondary sources. One view is the popularity of figure skating with the sports fans of the US. I evaluate this based on results from a Gallup poll conducted over the past four decades contextualizing the popularity of figure skating against other sports. Specifically, the poll measures the percent of Americans who consider each sport their favorite to follow. A second measure of popularity with the public is how often the sport is covered through print media. I use the number of mentions of figure skating in the *New York Times* as a proxy for popularity. The *New York Times* is considered a "newspaper of record" that historians rely on to provide an archival record of significant past events and associated public opinion at the time (Martin & Hansen 1998). As a measure of how prevalent figure skating was in the public consciousness in the eras pre and post the IJS, I plot a distribution of the percentage of articles centered on figure skating per year out of all Olympic sports related news.

A final measure of popularity especially important to the health of the sport is the robustness of its stream of new entrants who keep it growing and alive. As a metric of how attractive figure skating was to new entrants at different points in time, I compile membership numbers from past USFS reports. Membership status must be renewed with dues each year, so these numbers provide an indication of the number of people active in skating in the US. Further, the rate of growth in membership provides a measure of how effective the sport is at attracting new participants.

Section 1: Training Mastery

Targeting Success

Practice has been long understood to be the "major independent variable in the acquisition of skill (Chase & Simon 1973). In order for an athlete to effectively institute deliberate practice, he would need a "full consciousness of the immediate object to aim at" (Martin 1953). In other words, a formal definition of the path to success is important for an athlete to understand what immediate goals he must strive to achieve. The process accountability mechanisms of the IJS provide athletes with a definitive checklist of the elements of a "successful performance". In doing so, they lay the structure upon which athletes may climb toward success. The IJS has fundamentally changed both how skaters perform in competition and how they prepare in their day to day training.

For the skaters, a newfound form of motivation under the IJS is that they know that any effort they put toward fulfilling its guidelines will be rewarded. This gives skaters a strategic basis to draw upon when designing their programs. Understanding which elements will be rewarded by the judges allows skaters to build their performances tactically by their strengths. Michael Weiss, former US men's champion, explains, "Do something good and you get points for it… Now you can control your own destiny" (2003). Weiss took advantage of the reward transparency of the IJS and adapted his programs by upgrading the difficulty of his spins, footwork, and transitions (2003). Likewise, US Olympian Johnny Weir, though a critic of the IJS, echoes Weiss' sentiment that training under the system and "going for what will give you the most points" has made him a "stronger skater" (2006). From the beginning, the IJS has encouraged skaters to take on more challenging feats of athleticism. Weiss when asked if he

believes the new system would raise the standards of the sport comments, “I think it already has” (2003).

From its announcement, the IJS had the effect of encouraging athletes to push the boundaries of their athletic ability; this phenomenon has continued to hold true to the present day. Patrick Chan, three-time world champion, echoes the sentiments of his predecessors commenting, “The IJS rewards fairly every little bit of effort you put into the program” (2014). Furthermore, not only has the IJS impacted the program focus of individual athletes, longtime veterans of figure skating have observed a sustained impact on the standards of the sport. William Thompson, CEO of Skate Canada (Canada’s equivalent to the USFS), reflects “Programs the skaters are doing now are the type that officials under the old system were calling for: with complex footwork and difficult spins, as well as jumps” (2011). In fact, standards of athleticism in the sport have escalated at a dizzying rate. In the past decade figure skating has shifted to an unprecedented emphasis on increasingly difficult technical feats. The “Quad Revolution” in men’s and, more recently, women’s singles skating reflects skaters’ drive to attempt more and more difficult jumps (Tabb 2018). Skating insiders like Oleg Vasiliev, Olympic pairs’ champion and coach, credit this revolution to the new judging system that rewards individual elements in a way the 6.0 system did not (2019). By focusing on the quality of their individual elements, skaters are collectively pushing the athleticism of the sport forward.

Beyond the outwardly visible changes the IJS has wrought to skaters’ performances, it has also changed their fundamental approach to obtaining feedback in training. A US national judge explains that the IJS system provides skaters with much more “concrete knowledge” on how they need to improve (2006). A former skater and coach elaborates, “They tell you exactly what you need to do if you want to get a certain amount of points… it’s not like a guessing

game" (2006). Based off the directed feedback from judges in competition, skaters become cognizant of the individual elements that they must focus on in training. Another judge provides specific insight to the difference in skaters' mindsets, "They're much more aware of what they're doing... they're not so focused solely on what they landed or what they didn't land… they're going "Oh my God, did I hold my spirals long enough?...Did I get two revolutions in that edge" (2006). Skaters now have much more nuanced direction under the IJS and are systematically applying this feedback to their training.

For skaters, standard training practices have changed to give them even more opportunities for feedback; judges and officials have become increasingly involved in skaters' day to day. After the implementation of the IJS, skaters incorporated "judge monitoring sessions" organized by the USFS into their practices. During these sessions, officials judge the skaters' competitive programs and provide them with targeted feedback (Lom 2013). This level of judge involvement in skaters' training had never happened under the 6.0 system. Adherence to the judging system has become so important that skaters have begun to seek out IJS-specific feedback outside of competition.

This trend of judge feedback in training has escalated in the present day. Now, judge input has become ubiquitous in skaters' training. In a column to skating parents, the USFS advises parents to seek out feedback from judges for their children, explaining procedures for arranging critique sessions at local clubs and at competitions (Ogawa 2011). For judges too, these critique sessions have become a regular part of their duties. David Kirby, a US technical official, comments that working with skaters has become part of his normal routine; he has email video exchanges set up with coaches weekly (2015). Due to the availability of clear guidelines

for improvement delineated by the IJS, judge feedback has become a commonplace element of training at all levels of competition.

Skaters have learned to interpret feedback from judges to meaningfully drive the direction of their training. For example, pairs skaters Caydee Denney and John Coughlin speak to hearing "the judges' message loud and clear". After judges had consistently marked their technical abilities near the top of the field but kept them from finishing near the top due to their low program component scores, they were driven to focus their training on the transitional components in between their elements and incorporating their "own fingerprints" into their performances (2012). Their approach to training is not unique but rather is indicative of how skaters have adjusted around the targeted feedback enabled by the IJS. This new training approach has provided skaters with the ample opportunities for "informative feedback … and repetition for the correction of errors" that form the foundation of deliberate practice toward performance improvement (Ericsson 1993). In this way, the IJS has augmented the skaters' ability to achieve training mastery.

Not all change to the skaters' training practices was immediate; notably changes at the coaching level took longer to manifest. Following the implementation of the IJS, some coaches did encourage skaters to put more emphasis on practicing technical elements that would be explicitly rewarded. However, a few international level skaters emphasize that the judging system change did not impact the overall way they trained. One skater explains that training practices vary heavily depending on the background of the coach. His coach is from Russia and has "an appreciation for the arts and for choreography" (2006). Therefore, his coach's approach of emphasizing both technical excellence and the artistic coherence of his programs did not

change under the IJS. His story was true to many similar rinks where coaches continued to advise their skaters in much the same way they had prior to the IJS.

It is understandable that coaches would be attached to their traditional ways of operating. At the elite level, skating coaching centers tend to be clustered around well-known figures who have been around the sport for a long time. The techniques at each rink are well-defined, and they are diverse in nature; each is known for its particular culture and "school of thought". These coaches have been successful training their skaters in a certain way, so naturally, they would need time to adjust to a new playbook. Furthermore, it takes time under a new system for best practices to be uncovered and disseminated, so even the coaches more amenable to change would be expected to incorporate changes gradually.

This new information on best practices under the IJS eventually spread between US rinks. Though many training centers are institutions unto themselves, there still is a high degree of idea dissemination among coaches. Formal organizations like the Professional Skaters Association (PSA) exist to bring skating coaches and officials together and share knowledge. Following the shift to the IJS, these formal organizations rallied coaches around discussing how to best adapt to maximize their skaters' point scoring potential. A report from a PSA conference in 2009 documented the kind of advice being shared among attendants. David Kirby, technical specialist, urges coaches to "learn the rules… and start putting programs out there … to get your skaters out of the technical panel's review process" (2009). Under the IJS, more attention is paid to the quality of a skater's elements (e.g. jumps, spins, steps); elements under "technical review" are those of questionable quality under consideration for a point value downgrade. In essence, Kirby is urging coaches to train their skaters to execute elements with consideration for how officials under the IJS would evaluate them. Additionally, and more specifically, Charlie Cyr, another

ISU judge, advises that "maintaining good black and white skating positions is vital and achieving good skating skills as building blocks is everything" (2009). Through formal conferences and informal meetings between skating insiders, these practices on how to best prepare skaters for competing under the IJS have become more widely understood and adopted.

Gradually, operating under the IJS has become a new normal for coaches, and their practices have begun to align. Overall, coaches now rely much more on formally incorporating judge feedback into their skaters' training regimens. Coach Tom Zakrajsek (elite national coach) describes his training philosophy, "When we (coach and skater) produce our work and a judgement is made in terms of scoring…, everyone on the skater's team looks at what and how things have been decided and adjust their focus and emphasis accordingly" (2014). In essence, the focus of his entire coaching team is now centered around the scoring of a skater's program. Coach Tom Z's approach is not an isolated one. Terry Kubrick (national official) comments that being a good coach now involves much more homework on understanding how his skater's program would fare under the IJS (2015). Though initially, coaches' training approaches may not have varied substantially from under the 6.0 system, they have since evolved to contextualize quality skating firmly within the bounds defined by the IJS. As Coach Tom Z explains, "This is a natural occurrence since everyone who is competitive wants to advance" (2014).

All skating insiders were drastically impacted by the shift to the IJS process accountability system. Officials and skaters adapted immediately through tangible feedback sessions and newly narrowed training focus on areas for improvement defined under the IJS. Coaches took longer to adjust their modus operandi around the types of deliberate practice prescribed by the judging system. However, ultimately all of these insiders were able to derive

concrete knowledge from the IJS to adapt their approaches to helping skaters attain a greater degree of training mastery.

Formalizing Best Practices

As we saw in the previous section, many of the adaptions of training practices were driven by initial efforts of governing institutions. For example, judge critiques began as formal sessions organized by the USFS (Lom 2013). Once these relationships between skaters and judges became common practice, skaters began to seek out judge feedback informally as well (Ogawa 2011). Similarly, coaches did not change their training philosophies to account for feedback from the IJS as soon as the judging system change was implemented (Lom 2013). Rather, coaches learned how to think about training methods in the context of the IJS from their peers and USFS officials at conferences organized by the PSA (Leamy 2009). The impetus for change in these instances came top-down as organizations created formal avenues to encourage skating insiders to realize the full value of information available under the IJS.

In addition, these formal organizations have instituted education structures to raise the standards for both judging and coaching. Since the IJS was implemented, the USFS has released a series of judging seminars and tests judges are required to pass before serving at official competitions. Technical officials likewise are required to attend a two-day seminar followed by an exam. Through these sessions, officials are put in the position of adjudicating an event and are evaluated on the accuracy of their calls. One official in training describes the process as "unexpectedly grueling" and "a little bit overwhelming" (2009). For coaches, the Coaches Educational Requirements (CER) were ratified in 2008 by the USFS. The CER was a joint project by the USFS and the PSA to formalize the education among US coaches consisting of online courses and tests. IJS rules make up one of the four core topics coaches are tested over.

Debbie Minter, a master-rated coach and test evaluator, explains "it will help to ensure the standard among all of the coaches" (Leamy 2008).

The onset of these education structures following the implementation of the IJS is to be expected considering a process accountability structure is associated with new categories and concepts that must be identified and accounted for. Defining these categories necessarily creates additional complexity for users as they learn the new system. As a result, the governing organizations have to step in to guide people on how to use them (Lom 2013). Thus, the era following the implementation of the IJS spurred organizations like the USFS and the PSA to create formal conferences, critique sessions, courses, and tests around understanding and working under the IJS.

The impact of the IJS of engendering more rigorous training standards was not simply carried out on the individual level; much of the change was driven by efforts of organizations like the USFS. Though it is evident that the implementation of the IJS motivated the creation of formal structures to facilitate the change, I was curious as to whether it had a deeper and more lasting effect on the operations of the governing organizations of figure skating. More specifically, a lasting effect might be a culture change toward a more sustained emphasis on formalizing training rules. To this end, I investigate the actions of the USFS (the main US figure skating governing body) over time. With this data, a tangible cultural shift could be demonstrated if the USFS passed more formalizing measures in the era following the implementation of the IJS, compared to the time period before.

The data I examine is from the USFS Board of Directors. Every year, the board releases a Compiled Report of Action, which documents every rule discussed by the board and whether it was approved or not. These rules come from proposals from a variety of committees covering

everything from national budget allocations to inducting members into the Figure Skating Hall of Fame. I focused on rules relating to training for skaters and coaches because these would give me an impression of how relevant training mastery was to the organization in any given year. Many of these training rules govern the administration and interpretation of US Figure Skating tests. The USFS club resources page likens its test structure to the karate belt system. Skaters test though ascending levels until they reach "Double Gold Medalist" status – the equivalent of a black belt. Currently there are six to eight levels within each of the five different test tracks offered – Moves in the Field (compulsory figures), Free Skate, Pattern Dance, Free Dance, and Pairs. Testing levels are important for skaters because they represent levels of achievement in training mastery; they also provide qualification basis for skaters to enter different levels of official USFS competitions.

I split the training related rules into the categories of training difficulty and training formalization. Training difficulty rules involve efforts directed toward raising the standards of the sport. This could be establishing new test categories and levels or rules that increase standards within a test (e.g. adding a new required element). On the other hand, training formalization has to do with educational initiatives or structural clarifications to the existing tests. Educational initiatives would be coach seminars and training sessions. Clarifications would be structural changes to the tests (e.g. establishing how requirements for different test tracks relate or clarifying guidelines over elements of existing tests). Once, I defined these categories, I documented and tallied the number of rules from each year's Compiled Report of Action that fell into each of these two categories. Figure 5 depicts the trends in the number of training difficulty and training formalization rules approved per year.

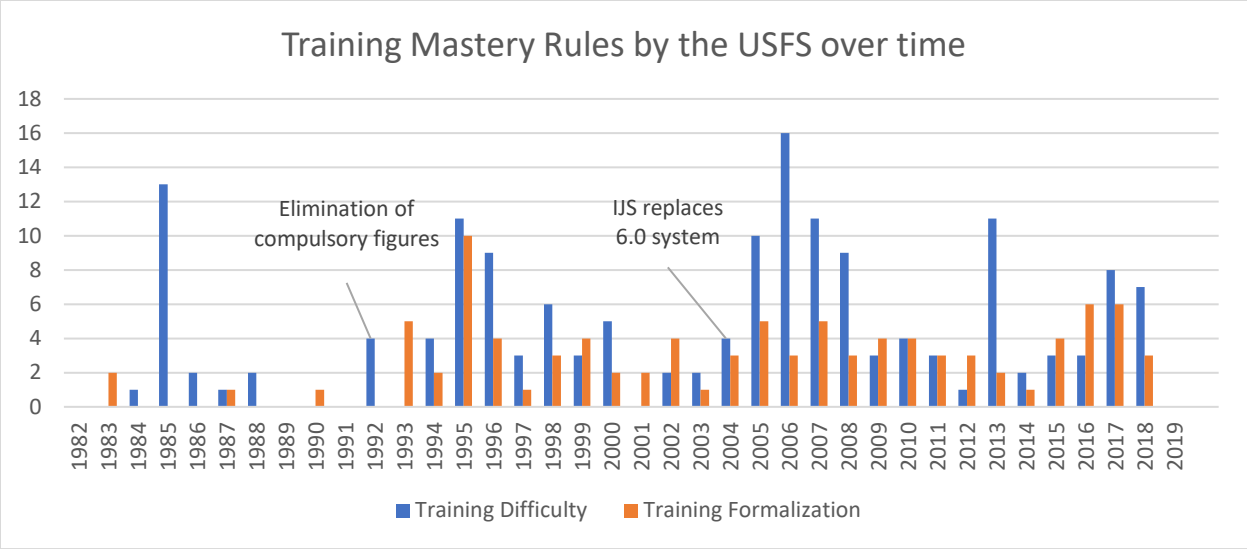

Figure 5 Number of training difficulty and training formalization rules approved by the USFS each year.

Overall, the trendlines for both training difficulty and training formalization appear to follow a sinusoidal pattern over ten-year cycles. It is to be expected that a formal organization may have built in timeframes after which they prescribe changes to their formalized structures. Much of the regular variation in the level of training rules may be attributed to such schedules. Without details from the representatives in the board meetings, it is difficult to associate these changes to distinct events as opposed to routine actions. I analyze the variance of this data to determine if the level of training rule changes in some years may deviate substantially from the norm.

The trendline for training formalization does not seem to vary substantially from year to year. The standard deviation of the data points is approximately 2.2 rules. No rule total from any year markedly deviates from the average of 2.7 rules except for an isolated spike in 1995. If anything, there seems to be more of a difference in the number of formalization rules per year between before the early 1990s and after, rather than any substantial difference between pre and post 2004 when the IJS was officially instituted in the United States.

An examination of rules implemented in the early 1990s reveals the impetus of many of the formalization rules may have been the elimination of the compulsory figures event from competitions in 1991. Though skaters were no longer scored on compulsory figures, many skating insiders still believed figures to be an integral part of skaters' development. Figures embodied the discipline of skating, demanding strength, precision, and body control. In order to ensure skaters were still learning these skills, the USFS instituted the Moves in the Field test, which became the basic prerequisite to earning levels in any other test field (Miele 1999). The bulk of the formalization rules in this period centered around defining the Moves in the Field test and reweighting it in relation to the other tests in response to the changed competitive requirements.

Following the 1995 spike in formalization rules, the distribution of new formalization rules approved per year remains fairly constant. The Board consistently reviewed and updated each of its tests year to year, iteratively clarifying element guidelines and structural relations between the tests. Training seminars for judges were implemented incrementally throughout this entire period as well. The only type of training formalization that varied consistently across the pre and post IJS eras was coaching training requirements because the first of these (CER) was implemented in response to the IJS (Lom 2013).

Perhaps the discrepancy in the number of formalization rules approved through the 1980s and early 1990s and the consistently higher volume thereafter may indicate a cultural shift toward training formalization following major changes to the competition structure and the judging system. However, more research would need to be done into actions of the board prior to 1982 (the first record in this data set) to ensure this volume discrepancy is not merely a natural fluctuation. As previously established, without direct input from insiders on the rationale behind

each rule, it is impossible to determine the causal relationships between the rules recorded and the events that inspired them. Thus, it is difficult to parse out which (if any) of the events (the elimination of figures and the implementation of the IJS) inspired lasting or even temporary changes to the inclinations of the USFS to formalize its training structures.

The variation in training difficulty rules seems to occur in more distinct peaks. There appear to be four clusters which vary substantially in volume of training difficulty rules (average rules approved = 4.5, standard deviation = 4.2). The spikes in 1985 and 2013 are more isolated (drastically more training difficulty rules in one year only). The 1985 spike was due to the establishment of an Adult series of dance tests, so the majority of the rules were a list of requirements for these new tests. Similarly, 2013 was a year the USFS majorly revamped the requirements to the pairs test.

More interestingly, the other two peaks appear to be clustered around the previously identified periods of major change to competitive figure skating. In 1995 and 1996, deliberations of the board centered around responding to the elimination of compulsory figures by structuring the Moves in the Field test requirements and adjusting the prerequisites around all other tests accordingly. From 2005 to 2008, the board was responding to the implementation of the IJS in 2004 and was adjusting test requirements to reflect the IJS guidelines for quality (e.g. spin positions must be held for at least three revolutions). These results seem to suggest that major changes to the sport are reflected in adjustments to training difficulty standards that are implemented and reevaluated over multiple competitive cycles. Though each of these spikes in volume of training difficulty rules waned after a few years, these escalations reflected elevated standards for training that would stay with the sport indefinitely.[2]

2) A tally of approved rules by the Board of Directors that diminished the difficulty level of testing requirements remained consistently low. Thus, it can be reasonably claimed that elevated training difficulty standards would hold constant following their implementation.

Ultimately the USFS Compiled Report of Action data was not able to conclusively reveal a relationship between the implementation of the IJS and an increase in training formalization rules. Though insider accounts have confirmed that formalized training structures have manifested in reaction to the IJS, there is inconclusive evidence to deem the post 2004 levels of training formalization a notable departure in volume from the formalization work done previously. However, the data did reveal that a multi-year period of elevated deliberation over new training difficulty rules did arise following the implementation of the IJS, demonstrating how organizational reactions to the IJS raised the training standards of the sport.

Section 2: Occupational Attraction

Deemphasizing Artistry

Though a benefit of a process accountability system like the IJS is that it raises the standards of the sport, chasing the standard may encourage skaters to conform upon a single model for quality defined by evaluation criteria. Furthermore, breaking a performance down to specific evaluation criteria makes it difficult to reward the intangible, artistic qualities of skating performances. This may not be not be a desirable outcome in a sport where public interest in often "driven more by figure skating's role as a showcase, … gracefully integrating strength and fragility, than by pure physical accomplishments" (Chloe Katz, pair skater 2014).

An inherent feature to a process accountability system is that it distills a performance into the sum of many small parts. Unlike the 6.0 system, under the IJS there is no concept of an "overall mark" that evaluates the effect of a skater's entire performance. The IJS evaluates technical elements and artistic components separately and within each category has even more finely grained delineations. These tightly defined categories provide judges with specific criteria to evaluate; the tradeoff is that "then the full richness and wholeness of performances would not be assessed" (Rosengerg & Lockwood 2005). Ben Wright, Olympics referee and figure skating historian, corroborates, "If you have to mark every little element separately, you'll never get your eyes off the paper… What it destroys is the concept of the overall performance" (2002).

This effect is especially problematic in an artistic field because artistic value is difficult to define. Without considering the entire product, many of the intangible qualities of a performance go unappreciated. Scott Williams, coach of Michelle Kwan, explains, "Occasionally something has a little bit of magic to it, and it surpasses the sum of its parts" (2003). The most iconic programs in history are the ones that capture people's attention with the magic of their intangible

qualities. People tend to conform to standards set by an evaluation system, so a judging system that emphasizes individual components at the expense of these intangible qualities would disincentivize skaters from considering the overall artistic merit to their performances (Espeland & Sauder 2007). Furthermore, because technical elements are much easier than artistic components to define under a process accountability system, programs under the IJS would maximize technical merit at the expense of artistry.

One key area artistry has been stifled is in the cohesive construction of skaters' programs. Olympian Johnny Weir comments, "You go for what will give you the most points, and most of the time, it's very ugly. It's not a pretty sport right now" (2006). Another elite skater confirms, "It's less art, it's more math, and it's more cramming in points" (2006). In essence, skaters are choosing point-maximizing elements for their programs without regard for whether they are aesthetic. Furthermore, because skaters are fixated on filling their programs with point-grabbing elements, they do not have as much space in the program to create sustained stretches of beautiful movement. "Because the spins, steps, variations, and jumps take longer, you're left with much less ability to create choreography as the program is created. You sort of have to lay the program out and add arms here, add arms there, put a little head turn there, put a kick there, and call that the choreography" (2006). Under the IJS point structure, skaters' approach to choreography has become to pencil it in between technical elements, rather than telling a cohesive narrative throughout the program. Veteran choreographer Lori Nichol describes the process as "painting by numbers with a straight-jacket on" (2006).

In addition, the IJS disincentivizes skaters from trying innovative variations on elements because of how rigidly it defines the point generating potential of existing elements. Thus, deviating from norm has become risky. In other words, skaters could choose to perform a

creative, untested variation of an element, or they could pick from a laundry list of established positions that are guaranteed to get them maximum credit. Choosing from the established positions maximizes points whereas choosing to do something different could backfire. One Olympic level judge describes his frustration with the tired set of spin positions, "[take] an example of a difficult position like a … donut position… and there was nothing though to say to people [except] don't repeat it over and over and over again, but because … coaches knew their skaters would get the level four difficulty for doing it, you had enough donuts out there for a bakeshop, and it was really boring to watch" (2006). Because innovation is not rewarded under the IJS, programs have become much more standardized. Lee Ann Miller, choreographer, states, "I hate the system… It's left no creativity. Everything's a cookie cutter" (2006).

The IJS has also diminished skaters' ability to interpret their music in an emotional way. An Olympic skater and TV commentator speaks to the importance of musical interpretation in skating, "Skaters need a purpose for skating a program… that includes expressing music. Music needs to be the foundation. You have a canvas, and you have to make sure before you start painting, you have an idea" (2006). Traditionally, music had been the starting point for crafting a program. The music would inspire movement that would tell a story to the audience. Under the IJS, instead of building a program from a musical approach, the process is reversed. Skaters, coaches, and choreographers often start with a list of technical elements that will maximize a skater's point generating prospects and then fit them as best as possible to a piece of music. Frank Carroll, elite coach, explains that this approach of laying out a program by "a mathematical game" prevents skaters from being inspired by what the music moves them to do (2006). Paul Wylie, Olympic silver medalist adds, "In a lot of cases the music is ignored [and] you miss that raw sort of emotion and interpretation" (2006). This lack of emotional connection

has been felt keenly by those in the audience. Sonia Bianchetti Garbato, ISU official, comments of the 2006 Olympic Games, "I cannot remember another Olympic Games… in which the best skaters failed to leave me and the audience with a piece of their personality and the emotion of the moment" (2006).

Similar criticism that the IJS has stifled artistry in choreography, innovative elements, and musical expression has continued through the years long after the IJS became the new normal. Chloe Katz, former pairs skater, criticizes the IJS for incentivizing skaters to squeeze as many high value elements into their programs leaving "little time … for optional acrobatic or artistic showstoppers" (2014). Megan Marod, skater, comments, "All the programs end up looking exactly the same because everyone is trying to put in the same level four tricks" (2010). Phil Hersh, figure skating journalist, calls for a judging system change that would "allow the sort of expression that distinguishes one skater from another" (2014). The same problems with point-grabbing, cookie cutter programs without emphasis on musical interpretation that skating insiders originally had with the IJS continue to surface along these same dimensions in the present day.

The shift in emphasis from artistry to technical prowess has been reflected in the stars of the new generation. Whereas the stars of the era pre-IJS like Katarina Witt and Michelle Kwan were renowned for their "passion for skating" and magical moments they created on the ice, top skaters under the IJS have been credited more for their point generating ability (Clarey 2003, Witt 2006). Rachael Flatt, 2010 US champion, is described as the IJS's "perfect competitor" who is "mathematically astute in piling up points" (2010). Similarly, Adelina Sotnikova, 2014 Olympic champion, is described as "tailor made for the current scoring system" (2014). Both

were commended for their tremendous technical ability but criticized for neglecting the artistic interpretation of their performances.

There still are skaters of the post-IJS era who value building iconic programs from a musical vision. An elite skater names Evan Lysacek, Tessa Virtue and Scott Moir as examples of stars of the 2010 Olympics who simultaneously brought in points but also "brought out the human spirit" through compelling storytelling (2010). In addition, Nathan Chen, two-time world champion, speaks to working closely with his choreographer to capture the essence of his music in his skating (2017). However, as this type of program focus is not explicitly rewarded by the IJS, far fewer skaters and choreographers approach program construction in this way compared to what was common under the 6.0 system (Lom 2013).

Depopularizing the Sport

The decline in artistry and creativity in figure skating is already, in many insiders' eyes, an inherent loss. Moreover, if this perception has chilled external stakeholder interest in the sport, the impact could be to render figure skating financially untenable. Figure skating is already prohibitively expensive for many prospective athletes. Costs for skaters at the elite level can run anywhere from $35,000 to $50,000 annually in equipment, training, and competition fees (Mulhere 2018). Peter Carlisle, an Olympics sports agent, estimates that less than five percent of Olympic level skaters can earn enough in name recognition and competitive success to support themselves through prize money and sponsorships (2018). The rest of the field depend on grants and loans through national organizations like the USFS, supplemental pay from appearances in ice shows, and familial support to cover the rest. The vast majority of these sources of income are tied directly to the popularity of the sport. Prize money and grants from national skating organizations are drawn from accounts filled from ticket sales of skating competitions and

membership dues. Ice shows depend on the avid skating fans willing to pay to attend. Sponsorships are dependent on the ability of athletes to draw their fanbase to a company's product. If these sources of income were to dry up so too would participation in competitions at the highest levels.

Even from a non-financial perspective, the sport can only continue if it remains popular in the public consciousness because popularity attracts new skaters. The average age of an elite figure skater is 22 years (Lupkin 2014). Elite skaters are not able to spend many years near the top of the field, especially as the athletic standards for the sport continue to rise. Skating relies on a steady stream of new entrants who (or more likely their parents) are fans of the sport to become the champions of the next generation (Garcia 2018).

Recently, skating insiders have expressed concern for the health of the sport. Ashley Wagner, two-time US champion, referred to it as "a dinosaur". "I am definitely worried for the sport from a business standpoint" (2014). Peter Carruthers, Olympic silver medalist, corroborates, "We have lost our audience. I see a slow death happening" (2014). By many measures these concerns appear valid. A major source of USFS revenue comes from TV licensing, and figure skating has become much less valuable to television broadcasters. Until 2007, ABC payed the USFS a $12 million annual rights fee. In 2012, the USFS reported the year's broadcasting and licensing revenue to be $1.97 million (Hersh 2014). This is because TV viewership for skating events has declined. The 2014 Sochi Games netted 21.4 million viewers, less than half the number that tuned in for the games two decades prior (Garcia 2018). Perhaps some of this decline could be attributed to lower cable television viewership in general. However, attendance at live skating events has been in decline as well. US championships attendance have been far below capacity. Ice tours, a major source of income for athletes, have

suffered. The Champions on Ice Tour at its peak a couple of decades ago performed in 70 cities; it folded in 2007. The Stars on Ice tour, the premier international ice tour, had 65 shows in the US in 2001, 41 in 2010, and 26 in 2014 (Hersh 2014). Perhaps most concerningly, the pipeline for new skating stars seems to have dried up. The last mainstream stars in women's skating, an event dominated by US women for over fifty years, were Michelle Kwan and Tara Lipinski who competed in the 1998 Olympics (Hersh 2014). Between 2006 and 2016, the US had an unprecedented nine-year drought of any US women on the podium at the world championships or the Olympics (Brennan 2016).

Philip Hersh, figure skating journalist, interviewed a dozen current and former competitors for their intuition on the reasons behind the sport's decline. These insiders cite the waning of the professional ice-skating circuit, the lack of US stars in the sport, and the incomprehensible judging system causing skaters to "sacrifice creativity for math" (2014). Sally Stapleford, former skater and official, comments, "What made skating so wonderful to watch and enjoy is now dying in front of our very eyes" (2004).

In order to gain a more comprehensive picture of skating's decline in popularity, I examine data on the variation of both fan opinion and content producer engagement with figure skating over time. Though this analysis cannot provide proof to the causality behind figure skating's decline in popularity, it can situate this decline chronologically. From this information, it is possible to determine whether the pattern matches our expectations – that the decline in popularity occurred following the implementation of the IJS in 2004.

In order to visualize how the fan following of skating has varied over time, I draw from Gallup poll data. Starting from 1937, Gallup asked respondents to select "What is your favorite sport to follow?" out of 19 different sports in order to ascertain the relative popularity of each.

The wording of the question is agnostic to the medium respondents use to follow their sport of choice. The responses are visualized in Figure 6 below.

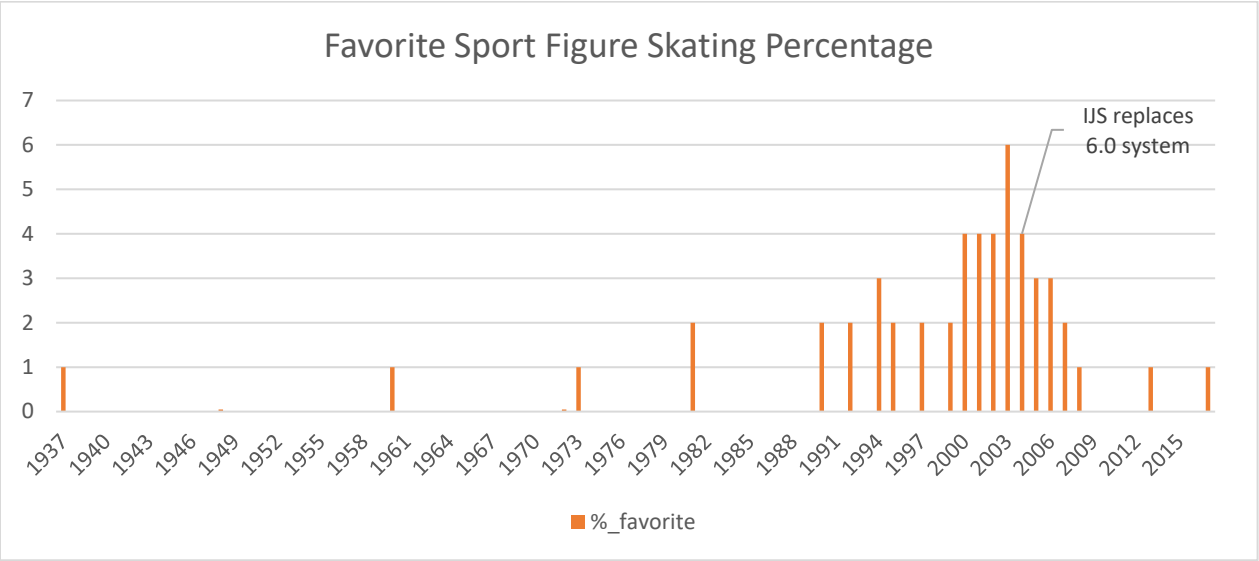

Figure 6 Gallup poll results: Percentage of respondents whose favorite sport is figure skating per year.

Though the data collection for the poll is sporadic, it paints a picture of a rise in figure skating popularity beginning around the 1970s or 80s. The peak years for the figure skating fan base are also difficult to determine given the sparseness of data points through the 80s and 90s. However, under the assumption that the years of peak popularity were around years of the Olympics Games, the period of the most sustained public interest was around the Olympic Games in 2002. From that time onwards, there seems to have been a steep decline in figure skating popularity over the following decade. This pattern seems to affirm the hypothesis that figure skating popularity declined in response to the effects of the implementation of the IJS in 2004.

Another view of how prevalent figure skating is in the public consciousness is through how the sport is covered by the media. I used random samples of archival records from the *New York Times* as a lens into historical public interest. This measure of skating popularity differs

from the Gallup poll in that the poll captures the proportion of strong skating fans per year; for these fans, skating was their number one sport of choice. The *New York Times* provides a measure of more general public interest, not just that of the super fan. In order to measure figure skating popularity in a given year, I calculated the percentage of articles covering figure skating out of all the articles over Olympic sports. Given the naturally periodical nature of Olympic articles, I evaluated popularity in terms of Olympic cycles. The distribution of skating related articles is depicted below in Figure 7.

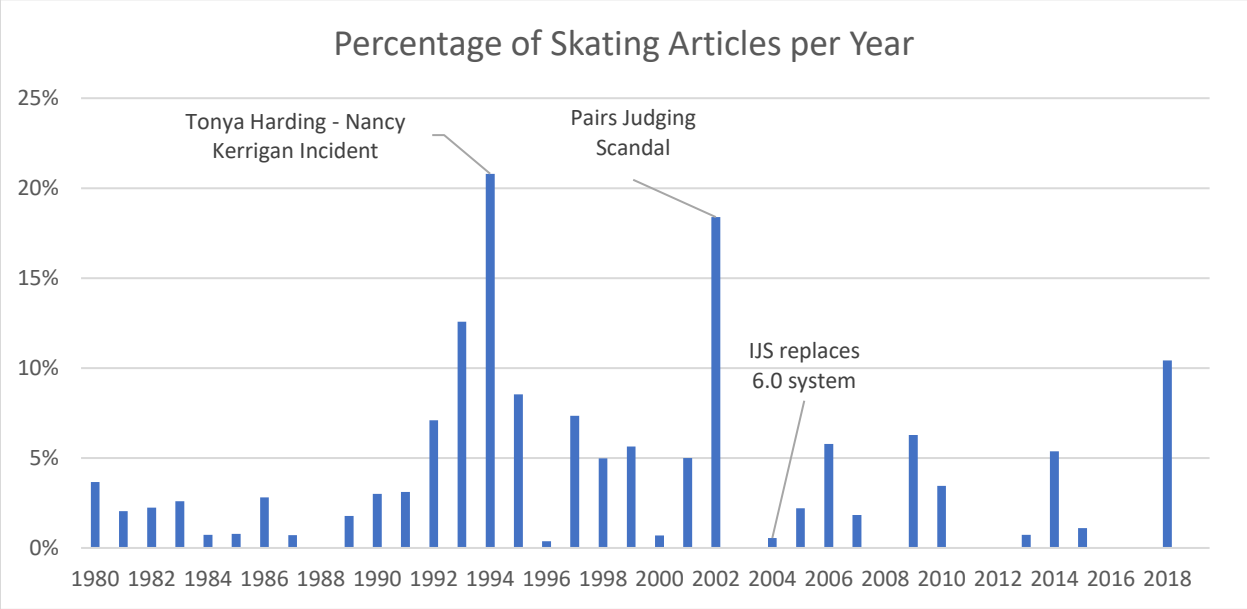

Figure 7 Percentage of Olympic articles covering figure skating per year.

This view of general public interest provides a different historical narrative compared to that of the Gallup poll. The standard deviation of the data is around 4.8 percentage points from the average of 3.8 percent. The three Olympic cycles that are outside of a single standard deviation of the average are the peaks around the 1994, 2002, and 2018 Olympic cycles. The visualization seems to indicate that the greatest peak popularity of the sport was around the 1994 Olympic cycle and the second highest peak around the 2002 Olympics. From there, there appears

to be a down-turn in popularity for the subsequent three Olympic cycles with an uptick in the year 2018.

The skew of the figure skating article mentions in 1994 and 2002 make sense given the sensationalist nature of the media. 1994 was the year of the Tonya Harding and Nancy Kerrigan incident, and 2002 was the year of the Olympic Pairs event judging scandal. Indeed, the articles from these two years are dominated by coverage of these two events. These events would have helped figure skating capture the interest of the general public. In fact, many skating insiders believe that "scandals are just a part of the intrigue that fuels the sport of figure skating" (Roberts 2002). These insiders appreciate the publicity and attention scandal brings to the sport.

The period of the greatest peak in coverage of Olympic figure skating took place around the 1994 Olympics. Though most of this coverage was centered around the Tonya Harding and Nancy Kerrigan incident, another contributing factor to the buzz at the time was likely due to the Winter Olympics event in 1994 following just two years after the event in 1992. 1994 was the first year the Winter Olympics fell on a different cycle from the Summer Olympics; prior they had occurred in the same year. Many skating fans only follow Olympic events, so excitement from the previous Olympic cycle was still fresh in the minds of spectators as they tuned in for the 1994 event. This elevated interest around Winter Olympics at the time would naturally be reflected in greater coverage of figure skating, the most popular winter sport.

Overall, the *New York Times* data seems to fit the narrative that the sport has been in decline since the 2004 shift in judging systems. However, the uptick in figure skating news reports in the 2018 Olympic cycle could be a signal of hope for the sport. The media coverage in this year was not dominated by any one scandal. Rather, articles centered on the incredible athletic feats carried off by Americans at the games, specifically the triple axel landed by Mirai

Nagasu (the first American lady to land the jump in international competition) and the six (world record breaking number) of quadruple jumps executed by Nathan Chen in his Olympics free skate. This effusive coverage may be a signal that the prospects of the sport might be rising with the technical prowess of America's next set of skating stars. Perhaps figure skating could gain its second wind in popularity as the public adjusts to its appeal as a display of extraordinary athletic ability even if its artistic appeal is not what it once was.

Figure skating's popularity with the general public is important because the sport needs to attract new entrants to produce the next generation's skating stars who will in turn keep interest in the sport alive (Garcia 2018). As an additional measure of sport popularity, I look at USFS membership numbers as an indication of the number of people involved with the sport. The USFS requires members to renew their dues each year, so the membership count serves as an accurate depiction of the number of people involved with the sport in the US. Presumably, the changes in membership numbers year to year would give an indication to how well the sport manages to retain and gain new members to replace the those leaving the sport. Figure 8 is a visualization of USFS membership year to year; Figure 9 is a visualization charting the percentage change in membership between each year.

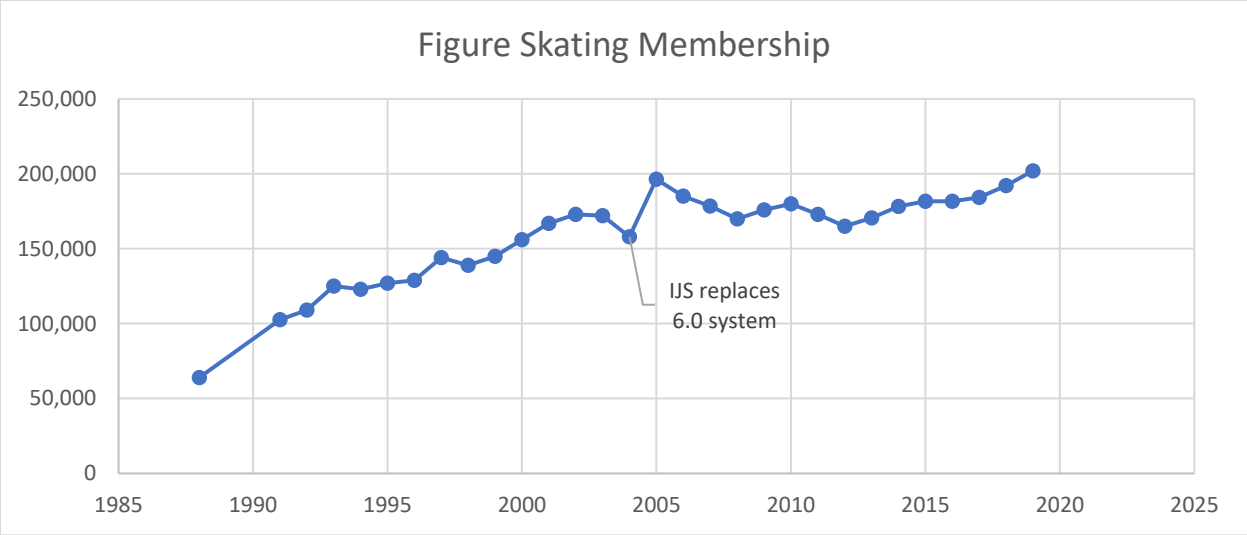

Figure 8 USFS membership numbers per year.

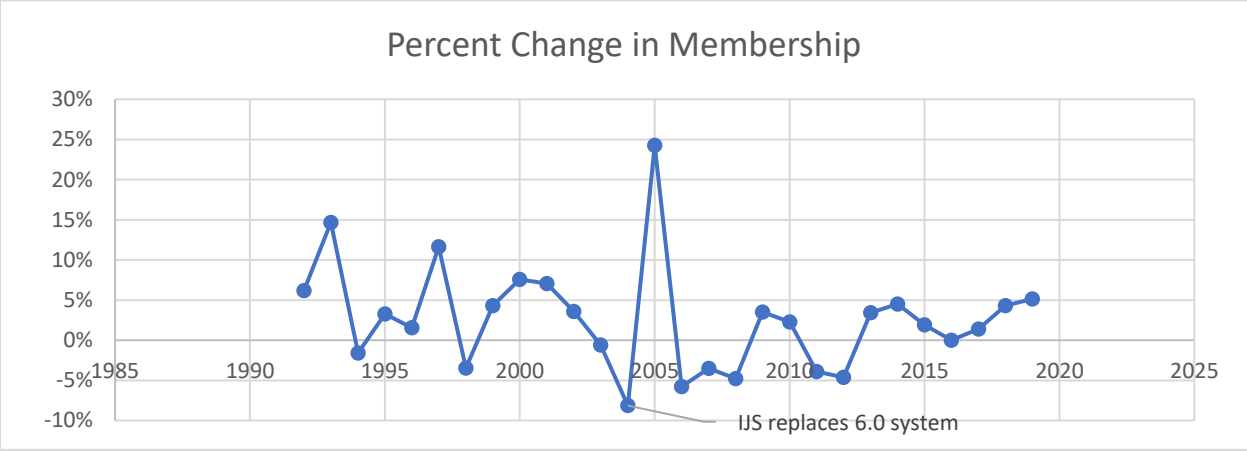

Figure 9 Percentage change in USFS membership numbers between years.

Membership grew fairly consistently through the 1990s and early 2000s, peaking in 2005. Thereafter, the membership levels remained stable, hovering around zero percent change from 2006 until 2019. Though the end of the membership growth period following 2005 seems to indicate a decline in popularity, there does not appear to be any immediate danger to the pipeline of talent in the sport. David Raith, executive director of the USFS expresses optimism, pointing to these steady membership numbers (2014). This steady trend could be attributable to USFS efforts to encourage youth participation in figure skating. In response to slowing growth, the

USFS has instituted new youth programs, such as Learn to Skate, a nationwide program of skating classes, and Icemen, a group for two-year-old boys. These programs seem to have been successful at stimulating interest in figure skating at the lower levels. Though given the widening gap in performance at the elite level between the US and other skating powerhouse countries like Russia and Japan, if new participant numbers is not the issue, the USFS must develop new strategies to help refine the talent that they already have to be competitive with the rest of the world (Dunaway 2018).

Examining historical trends in figure skating popularity with strong fans, the general public, and prospective members indicates that public interest did in fact decline following the implementation of the IJS in 2004. Thus, it appears that skating insiders' fears several decades ago of the IJS stripping away the watchability of the sport has come to pass. Fortunately, the ISU has not been deaf to insiders' concerns around the decline of artistry and is in the process of restructuring competitions to rebalance the contents of skaters' programs. At the latest ISU council meeting, officials discussed a proposal to divide competitions into two separate showcases, one a technical event and the other an artistic one (Hersh 2020). Details have yet to be released on how each of these events is to be judged, and time will only tell how effective this new structure may be to recapture the magic that has been escaping the sport in recent history. However, this announcement demonstrates that stakeholders are committed to seeking the structure that will encourage the right balance in technical and artistic merit.

CONCLUSION

Accountability structures have a tendency to affect "how we think beyond simply what we think", which can deeply impact the behavior of people within an organization (Frink et al. 2008). This thesis has reconciled the understanding of how process versus outcome accountability structures can benefit or detriment an organization depending on the position of the affected stakeholder.

Internal stakeholders benefit from the "concrete knowledge" provided to them by a rigid process accountability system. This knowledge is integral to insiders' understanding of how to succeed within the bounds of the system, boosting them toward attaining training mastery. On a macro-level, organizations reflect this wealth of available knowledge by formalizing members' training to enhance their ability to succeed. Under this system, insiders improve quickly toward attaining the process accountability system's tightly defined definition of success.

External stakeholders, however, may be put off by the conformity of products by members under the process accountability system. Many desirable qualities, such as creativity, may be intangible and difficult to capture categorically under a process accountability system. Thus, the rigidly defined picture of success insiders move toward may not be one external stakeholders are willing to engage with. This is problematic in fields dependent on external interest to survive, whether this is via financial support or supplying prospective new entrants. External stakeholder interest then may be better served by an outcome accountability structure that allow insiders greater flexibility in creating quality output.

Ultimately, the onus is on an organization to determine the relative importance of the growth of internal stakeholders against the interest of external stakeholders. This paper provides

organizational leaders with a framework with which to consider the system that would best suit their organization's values and purposes.

Theoretical Contributions

The first theoretical contribution of my research is to provide a framework to reconcile conflicting effects of accountability structures uncovered through existing research. Experiments evaluating the performances of projects under process and outcome accountability systems have not conclusively provided evidence of the performance effects of either. Results were mixed with an array of studies finding significant positive impact under process accountability and insignificant results under outcome accountability (Henderson & Lee 1992; Klein et al. 2006) and vice versa, positive impact under outcome accountability and insignificant results under process accountability (Tiwana & Keil 2010, Gopal & Gosain 2010). My research provides the mediating factor of the origin of the stakeholder (internal or external) as a contributing variable to the efficacy of process versus outcome accountability systems.

Second, my research is conducted in a naturalistic setting more parallel to the work conditions of an organization considering the implementation of either a process or outcome accountability system than the laboratory experiments covered in the majority of available literature. A laboratory setting could skew results in ways artificial to a real-world scenario. For example, in laboratory experiments, process accountability is often simulated by simply asking participants to justify the decisions they made. The act of asking for justification could signal to participants that the scenario presented is normatively ambiguous, encouraging them to process provided information more vigilantly to come to a defensible solution (Patil, Tetlock, Mellers 2016). In contrast, organizations usually rely on process accountability to signal the opposite -- that there is a prescribed procedure for making decisions (Davis & Kottemann 1994).

Conversely, these experiments may have conflated outcome accountability scenarios with normative definitiveness through the messaging that participants' results would be compared with more credible sources to assess their accuracy (Patil, Tetlock, Mellers 2016). These "hit or miss" test scenarios may be associated with greater pressure than those of the normatively ambiguous process accountability test scenarios (Siegel-Jacobs & Yates 1996). My research, conducted in a naturalistic setting, is free from the possibility of undesired signaling from artificially created accountability scenarios and can thus, provide an unbiased perspective into the effects of both systems.

Third, my research is a longitudinal study that reveals the impact of process and outcome accountability systems over time. This addresses the limitation of prior research in accountability that has been largely confined to "single-session laboratory experiments in which subjects had little or no opportunity for learning and adjustment" (Chang et al. 2017). My study of figure skating over many decades provides ample opportunity to observe the sustained impact of both process and outcome accountability structures after they are accepted by all stakeholders involved as the norm. Similarly, within the field of sports history, work has been done to document the impressions of figure skating insiders on the IJS immediately following the judging system change. My work builds upon this previous research to contribute to the understanding of whether these impacts are observable over a sustained period of time. My study of observable effects on figure skating training mastery and external interest reflects how figure skaters have adjusted their performance to the new process accountability system from the time of its inception to after they have adjusted to it as their status quo.

Finally, my research provides a practical framework that organizational leaders may use to determine the proper accountability system to serve their organizational goals, especially in

fields that value creativity as an important dimension of success. Decision makers should evaluate to what degree their overall performance depends on the perspective of internal or external stakeholders to inform the accountability structure they ultimately choose. If companies are most concerned with ensuring employees understand how their actions directly contribute to their performance, decision makers should employ a process accountability system. On the other hand, if decision makers are concerned with how external stakeholders judge their output, they should employ an outcome accountability system. As in the case of figure skating, if organizational leaders have to wrestle with both the interests of internal and external stakeholders, my research should inform leaders of the potential benefits and raise awareness of the need to account for any drawbacks of each system and open discussion over designing a system that would blend the two effects.

Limitations & Areas of Further Research

I chose to use a historical research methodology because this lens allowed me to draw conclusions over the long-term impact of accountability systems. Comparing pre-recorded accounts and data from the time periods I was investigating (immediately following the judging system shift from 2004 to 2006 and the era following the normalization of the system from 2010 to the present day) allowed me to avoid the recency bias that interviewing stakeholders, asking them to reflect over the full time period, would suffer from. However, a limitation of this approach was that it was not possible to explicitly draw causality from the judging system shift to the behavior changes observed. My historical study could be supplemented with interviews with skating stakeholders to determine if their perceptions of how their behavior has changed due to the judging system shift corroborates my findings. Another limitation of a long-term case study is that an organization undergoes many changes in any given period of time, so it is

difficult to isolate the effect of an accountability system shift. To refine our understanding of how the position of a stakeholder may mediate his response to an accountability system, this relationship would have to be examined in a controlled experimental setting.

Another limitation of my research was that case study I used was only an investigation of the impacts of different accountability systems within a single cultural context. All of the data on effects documented on training and occupational attraction were from the US Figure Skating Association or from entities within the United States. Previous research from Patil & Tetlock highlights how cultural context may mediate the effects of process and outcome accountability (2014). For example, conformity to a process accountability structure may be intensified in a collectivist system. Alternatively, creative pursuits may be more emergent through outcome accountability structures in individualist systems. International figure skating provides a unique context in which a universal accountability structure is dictated top down to national governing bodies, each with their own cultural contexts. Perhaps individualist national cultures (e.g. the United States) may have been more encouraged by an outcome accountability system to deviate from the norm and create more innovative programs compared to collectivist national cultures (e.g. Japan). In addition, the observed effect of conformity to the IJS may have been intensified in a collectivist national culture. A comparative analysis could shed light to the degree cultural context mediates an organization's response to different accountability types.

An additional limitation is that my research solely contextualizes process and outcome accountability systems along the differentiating dimension of formality (the IJS was a formally codified institutional mechanism compared to the 6.0 system which was much less formal and allowed for unwritten, less objective rulings). Cardinal et al. has identified two other dimensions of control my research does not account for (2017).

The first of these is coerciveness, depending on how the accountability system is perceived by the people evaluated – whether it is viewed as an enabling and helpful to employees reach their goals or if it is a "heavy hand" for compliance. Figure skating provides a context in which skaters are highly enabled by the judging system; they are motivated to conform because success defined by the judging system is perfectly in line with their personal definitions of success. My research was able to determine the impact of process and accountability systems in this maximally enabled context where participants are highly motivated to understand how to best succeed under the system. Thus, my findings on the benefits and drawbacks to each system may not hold true in a more coercive culture where individuals are likely to take care of their own interests ahead of the organization's and the accountability structure is meant to keep them in line with rules and directives. This context likely will not be found in a similarly competitive environment, but there may be plenty of scope for researchers to study less voluntary contexts (e.g. education).

The second dimension of control is how singular or holistic the accountability system may be. My research took a singular understanding of a process versus an outcome accountability structure, looking at two singular examples that matched each type. However, the understanding of accountability systems has evolved to include a more holistic approach that involves a blended system with characteristics of both process and outcome accountability. This holistic type of system is likely what would best suit a complex organizational context like figure skating that must balance interests of both internal and external stakeholders. As the field of international figure skating continues to evolve with the aim of seeking a balance between driving training mastery and fueling creativity and popular appeal, it may yet become a fertile environment through which to study a balanced process and outcome evaluative system.

References

All about US figure skating tests. (n.d.). *US Figure Skating Club Resources*.

Anderson, E., & Oliver, R. (1987). Perspectives on Behavior-Based versus Outcome-Based Salesforce Control Systems. *Journal of Marketing, 51*(4), 76-88. doi:10.2307/1251249

Asare, S., Trompeter, G., & Wright, A. (2000). The eVect of accountability and time budgets on auditors' testing strategies. Contemporary Accounting Research, 17, 539–560.

Ashton, R. H. (1992). Effects of justification and a mechanical aidon judgment performance. Organizational Behavior and HumanDecision Processes, 52(2), 292–306.

Aulakh, P. S., Kotabe, M. and Sahay, A. (1996). 'Trust and performance in cross-border marketing partnerships: A behavioral approach'. Journal of International Business Studies, 27, 1005–32.

Batia M. Wiesenfeld, Jean-Nicolas Reyt, Joel Brockner, Yaacov Trop (2017) Construal Level Theory in Organizational ResearcheAnnual Review of Organizational Psychology and Organizational Behavior 4:1, 367-400

Batra, S. (2017). How do new ventures attract and retain talented employees? the case of shaadisaga. *Human Resource Management International Digest, 25*(2), 1-3. doi:http://dx.doi.org/10.1108/HRMID-09-2016-0130

Berger, P., & Luckmann, T. (1966). The social construction of reality: A treatise in the sociology of knowledge. London: Penguin Books.

Bianchetti, S. (2003). [The ISU Code of Points computerized judging system]. Retrieved March 4, 2020, from http://www.worldskating.org/news/sonia-cop.shtml

Bonner, S., & Walker, P. (1994). The Effects of Instruction and Experience on the Acquisition of Auditing Knowledge. The Accounting Review, 69(1), 157-178. Retrieved from www.jstor.org/stable/248265

Brennan, C. (2016, January 26). Here's why US figure skating has fallen so far. *USA Today Sports*. Retrieved from https://www.usatoday.com/story/sports/columnist/brennan/2016/01/21/brennan-heres-why-us-figure-skating-has-fallen-so-far/79138476/

Brtek, M. D., & Motowidlo, S. J. (2002). Effects of procedure and outcome accountability on interview validity. Journal of AppliedPsychology, 87(1), 185–191.

Bryant, C. C., & Sappenfield, M. (2010, February 19). Judging Olympic figure skating: More numbers than art? Retrieved from https://www.csmonitor.com/World/Olympics/2010/0218/Judging-Olympic-figure-skating-More-numbers-than-art

C.E.H. Chua, W.K. Lim, C. Soh, S.K. SiaEnacting clan control in complex IT projects: a social capital perspective MIS Q., 36 (2) (2012), pp. 577-600

Chaiken, S. (1980). Heuristic versus systematic information pro-cessing and the use of source versus message cues in persuasion. Journal of Personality and Social Psychology, 39(5), 752–766.

Chang, C., Ho, J., & Liao, W. (1997). The effects of justification, task complexity and experience/training on problem-solving performance. Behavioral Research in Accounting, 9, 98–116.

Chase, W.G., & Simon, H.A (1973). The mind's eye in chess. In W.G. Chase (Ed.), Visual information processing {pp. 215-281). New York: Academic Press.

Clarey, C. (2003, Mar 31). Kwan not questioning her future on skates. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92668741?accountid=7118

Dalla Via, N., Perego, P., & van Rinsum, M. (2019). How accountability type influences information search processes and decision quality. Accounting, Organizations and Society, 75, 79-91. doi:10.1016/j.aos.2018.10.001

David Barron, "New scoring system sparks skate debate," Houston Chronicle, January 29, 2006, p. 1.

Dixon, N. (2003). Canadian figure skaters, French judges, and Realism in sport. *Journal of the Philosophy of Sport, XXX*.

Dunaway, J. (2018, February 21). American women used to dominate in figure skating. What happened? *Slate Magazine*. Retrieved from https://slate.com/culture/2018/02/three-theories-that-explain-the-downfall-of-u-s-womens-figure-skating.html

Pennings (eds.), New Perspectives on Organizational Effectiveness, Jossey-Bass, San Francisco, 1977.

Ericsson, K.A, Krampe, R.T., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. Psychological Review, 100 (3), 363-40.

Feldman, M. S., & March, J. G. (1981). Information in organizations as signal and symbol. Administrative Science Quarterly, 26, 171–186.

Eval of process à think about thinking: ensure consistency with standard practices

Findlay, L C;Ste-Marie. "A Reputation Bias in Figure Skating Judging." *Journal of sport & exercise psychology.* 26.1 (2004): n. pag. Web.

Finnegan, R. P. (2010). Rethinking retention in good times and bad: Breakthrough ideas for keeping your best workers. Boston, MA, Davies-Black

Ford, J. K., & Weldon, E. (1981). Forewarning and accountability.Personality and Social Psychology Bulletin, 7(2), 264.

Frink, D. D., Hall, A. T., Perryman, A. A., Ranft, A. L., Hochwarter, W. A., Ferris, G. R., . . . Todd Royle, M. (2008). Meso-level theory of accountability in organizations. In R. Buckley, J. Halbesleven & A. Wheeler (Eds.), Research in personnel and human resources management (Vol. 27, pp. 177–245). Bingley, UK: Elsevier Science. doi:10.1016/S0742-7301(08)27005-2

Garbato, "Personal Comments to the ISU Press Release on the New Judging System," February 2004, http://www.soniabianchetti.com /writings_Moscow (accessed 6 April 2006).

Garcia, A. (2018, February 13). US figure skating used to be wildly popular. What happened? *CNN*. Retrieved from https://money.cnn.com/2018/02/13/news/figure-skating-popularity-us-olympics-pyeongchang/index.html

Gopal, A. and Gosain, S. (2010). 'Research note – the role of organizational controls and boundary spanning in software development outsourcing: Implications for project performance'. Information Systems Research, 21, 960–82

Hackman, J. R., & Wageman, R. (1995). Total quality management: Empirical, conceptual, and practical issues. Administrative Science Quarterly, 40, 309–342.

Hagafors, R., & Brehmer, B. (1983). Does having to justify one's judgments change the nature of the judgment process? Organi- zational Behavior and Human Process, 31, 223–232.

Hanley, E. A. (2000). A perennial dilemma: Artistic sports on the Olympics games. *Journal of Olympic History*, 39-46.

Harvey, R. (1992, Feb 05). Pluses since '88 outweigh minuses figure skating: The elimination of compulsory figures will result in more challenging performances.: [home edition]. *Los Angeles Times (Pre-1997 Fulltext)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/281584290?accountid=7118

Häusser, J. A., Frisch, J. U., Wanzel, S., & Schulz-Hardt, S. (2017). Effects of process and outcome accountability on idea generation. Experimental Psychology, 64(4), 262–272. https://doi-org.ezproxy.lib.utexas.edu/10.1027/1618-3169/a000368 (Supplemental)

Hersh, P. (2014, Feb 07). SOCHI 2014; sick figures; skating is losing its U.S. audience. some foresee 'a slow death.'. *Los Angeles Times* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/1495403199?accountid=7118

Hersh, P. (2019, September 19). Quad revolution comes in force to women's figure skating. *NBC Sports*. Retrieved from https://olympics.nbcsports.com/2019/09/19/alysa-liu-figure-skating-quad-revolution/

Hersh, P. (2020, February 13). In figure skating, a radical proposal to reshape the sport. *NBC Sport*. Retrieved from https://olympics.nbcsports.com/2020/02/13/figure-skating-scoring-changes-proposal/

Hines, J. (2015). *Figure Skating in the Formative Years Singles, Pairs, and the Expanding Role of Women / James R. Hines.* Urbana, Illinois; University of Illinois Press.

Hines, J. R. (2006). *Figure skating: A history*.

J. Henderson, S. Lee Managing I/S design teams: a control theories perspective Manag. Sci., 38 (6) (1992), pp. 757-777

Jean-Nicolas Reyt and Batia M. Wiesenfeld (2015) Seeing the Forest for the Trees: Exploratory Learning, Mobile Technology, and Knowledge Workers' Role Integration Behaviors Academy of Management Journal 58:3, 739-762

Johnson, V., & Kaplan, S. (1991). Experimental evidence on the effects of accountability on auditor judgments. Auditing: A Journal of Practice & Theory, 10, 96–107.

Katarina Witt, "No Soul on Ice," New York Times, February 22, 2006, p. A19.

Katz, Chloe. (2014, Feb 15). Levelling the rink: Judging in figure skating. *The Economist (Online)*, Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/1498482129?accountid=7118

Kennedy, J. (1993). Debiasing audit judgments with accountability: a framework and experimental results. Journal of Accounting Research, 31, 231–245.

Kenworthy, S. (2010). *Decision-making in figure skating: A study of cognitive processing by judges* (Order No. 3420346). Available from ProQuest Dissertations & Theses Global. (748291593). Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/748291593?accountid=7118

KILMANN, R. H., PONDY, L. R. AND SLEVIN, D. P. (EDS.), The Management of Organization Design: Research and Methodology, Vol. II, North-Holland, New York, 1976.

Kreutzer, M., Walter, J. and Cardinal, L. B. (2015). 'Organizational control as antidote to politics in the pursuit of strategic initiatives'. Strategic Management Journal, 36, 1317–37

Laura B. Cardinal, Markus Kreutzer, and C. Chet Miller (2017) An Aspirational View of Organizational Control Research: Re-invigorating Empirical Work to Better Meet the

Challenges of 21st Century OrganizationsAcademy of Management Annals 2017 11:2, 559-592

Leamy, L. (2008, August 19). Coach speak. *SKATING Magazine*.

Leamy, L. (2009, August 4). PSA conference. *SKATING Magazine*.

Liberman, N., Molden, D. C., Idson, L. C., and Higgins, E. T. 2001. "Promotion and Prevention Focus on Alternative Hypotheses: Implications for Attributional Functions." Journal of Personality and Social Psychology, 80: 5–18.

Litsky, F. (2003, Oct 26). Rewards become focus of scoring experiment. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92524451?accountid=7118

Litsky, F. (2003, Oct 24). New scoring system takes spotlight. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92612442?accountid=7118

Liu, S. (2015). ' Effects of control on the performance of information systems projects: The moderating role of complexity risk'. Journal of Operations Management, 36, 46– 62.

Lom, S. E. (2013). *"Sometimes less is more": The development and effects of evaluative cultures* (Order No. 3563771). Available from ProQuest Dissertations & Theses Global. (1400274465). Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/1400274465?accountid=7118

Longman, J. (2010, Jan 25). INSIDE THE RINGS: WHEN SCORING HAS LITTLE LOVE FOR ARTISTRY. *New York Times (1923-Current File)* Retrieved from

http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/1461079205?accountid=7118

Longman, J. (2014, Feb 21). Formula for upset: Arithmetic trumps art. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/1942688116?accountid=7118

Lori Shontz, "Judgment daze: Figure skating's new judging system debuts this week in the U.S. champion-ships at Savvis Center, and there's much debate about whether it's an improvement," St. Louis Post-Dis-patch, January 6, 2006, p. 1.

Lupkin, S. (2014, February). Too old to be an Olympic figure skating? There's always curling. *ABC News*. Retrieved from https://abcnews.go.com/blogs/health/2014/02/12/too-old-to-be-an-olympic-figure-skater-theres-always-curling

M.L. Harris, R.W. Collins, A.R. HevnerControl of flexible software development under uncertainty Inf. Syst. Res., 20 (3) (2009), pp. 400-419

Mark Sappenfi eld, "No More 6.0s: the new judging system for fi gure skating," Christian Science Monitor, Febuary 13, 2006, p. 11.

Martin, S., & Hansen, K. (1998). Newspapers of record in a digital age : from hot type to hot link / Shannon E. Martin and Kathleen A. Hansen. Westport, Conn: Praeger.

Martin, P. (1953). The psychology of human effort. *The Olympic Review*, 30-32.

McAllister, D. W., Mitchell, T. R., & Beach, L. R. (1979). The contingency model for the selection of decision strategies: An empirical test of the effects of significance, accountability, and reversibility. Organizational Behavior & Human Performance, 24, 228–244.

McKay, B. (2014, Feb 04). Why U.S. figure skating may be in decline; sport's cooling popularity may lead to fewer olympic medals. *Wall Street Journal (Online)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/1494140971?accountid=7118

McKinnis, M. (2017, November 11). Artistry on ice begins in the dance studio. *SKATING Magazine*.

Miele, L. A. (1999, January 5). Precision's crystal ball. *SKATING Magazine*. Retrieved from https://xmlmanager.qg.com/search?q=(((%22compulsory%20figures%22)%20))%20AND%20issueYear:%221999%22&ref=Skating_199901_05

figures

Mulhere, K. (2018, February 9). This is the insane amount of money it takes to become an Olympic figure skater. *Money*. Retrieved from https://money.com/olympic-figure-skating-costs/

NBC commentators surprised, shocked by judges. (2002, February). *Associated Press*. Retrieved from http://www.espn.com/olympics/winter02/figure/news?id=1330413

Ogawa, L. (2011, April). Parents column: Just ask. *SKATING Magazine*.

Patil, S. V., Tetlock, P. E. 2014 "Punctuated incongruity: A new approach to managing trade-offs between conformity and deviation." In Staw, B. M., Brief, A. P. (eds.), Research in Organizational Behavior, 34: 155–171. New York: Elsevier.

Patil, S.V., Vieider, F. & Tetlock, P.E. (2014). Process Versus Outcome Accountability. In M. Bovens, R.E. Goodin & T. Schillemans (Eds.), e Oxford Handbook of Public Accountability. New York: Oxford University Press. [doi: 10.1093/oxfordhb/9780199641253.013.0002]

Patil, S. V., Tetlock, P. E., and Mellers, B. A. (2017) Accountability Systems and Group Norms: Balancing the Risks of Mindless Conformity and Reckless Deviation. *J. Behav. Dec. Making*, 30: 282– 303. doi: 10.1002/bdm.1933.

Pilon, M., & Longman, J. (2014, Feb 06). Skating's mixed marks: Despite revamped systems for judging and scoring, major problems remain. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/1941368418?accountid=7118

Porter, Theodore M. 1995. Trust in Numbers: The Pursuit of Objectivity in Science and Public Life. Princeton, NJ: Princeton University Press.

Quinn, R., & Rohrbaugh, J. (1983). A Spatial Model of Effectiveness Criteria: Towards a Competing Values Approach to Organizational Analysis. *Management Science*, *29*(3), 363-377. Retrieved from http://www.jstor.org.ezproxy.lib.utexas.edu/stable/2631061

Radnofsky, L. (2019, Dec 20). Who needs triple axels and toe Loops—Give us 'compulsory figures'; skaters revive an event killed off long ago as excruciatingly dull, even for the competitors. with no leaping needed, 'we don't say anyone's washed up at 13 or 16,' says a league organizer. *Wall Street Journal (Online)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/2328868779?accountid=7118

Roberts, S. (2002, Feb 05). FIGURE SKATING. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92277020?accountid=7118

Roberts, S. (2002, Jun 03). FIGURE SKATING: SKATING UNION TO CONSIDER CHANGES. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92231684?accountid=7118

Roberts, S. (2002, Oct 27). FIGURE SKATING: TOP SKATERS HAVE POWER TO REFORM. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92200396?accountid=7118

Roberts, S. (2002, Feb 19). Skating group proposes a new system of judging: FIGURE SKATING top official proposes A new scoring system A seemingly endless stream of charges and countercharges over the judging. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92158070?accountid=7118

Rosengerg, D., & Lockwood, K. L. (2005). Will the new figure skating judging system improve fairness at the winter Olympics. *Olympika: The International Journal of Olympic Studies*, *XIV*, 69-84.

Rosewater, A. (2002, Oct 04). FIGURE SKATING: NEW SCORING SYSTEM, NEARLY READY FOR UNVEILING, IS IN DEVELOPING STAGES. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92168419?accountid=7118

Rozelle, R. M., & Baxter, J. C. (1981). Influence of role pressures on the perceiver: Judgments of videotaped interviews varying judge accountability and responsibility. Journal of Applied Psychology, 66(4), 437.

Russell, E. L., III. (2003, October 9). Winning and losing in figure skating. Retrieved March 4, 2020, from World Skating website: http://www.worldskating.org/news/russell.htm

Russell, J. S. (1997). The concept of a call in baseball. *Journal of the Philosophy of Sport, XXIV*, 23-24.

Rutherford, L. (2012, November 9). Core values: Denney and Coughun focus on what's inside. *SKATING Magazine*.

Rutherford, L. (2015, February 6). Making the calls: Technical specialists give insight to their job behind the scenes. *SKATING Magazine*.

S. Kim, K.T. Trotman The comparative effect of process and outcome accountability in enhancing professional scepticism Accounting and Finance, 55 (4) (2015), pp. 1015-1040

Siegel-Jacobs, K., & Yates, J. F. (1996). Effects of procedural and outcome accountability on judgment quality. Organizational Behavior and Human Decision Processes, 65(1), 1–17.

Simons, R. (2013, June 15). *The Entrepreneurial Gap: How Managers Adjust Span of Accountability and Span of Control to Implement Business Strategy*. Retrieved from http://www.hbs.edu/faculty/Publication%20Files/13-100_2d6016b2-6861-478c-a488-98ca7d71ba53.pdf

Simonson, I., & Staw, B. M. (1992). Deescalation strategies: A comparison of techniques for reducing commitment to losing courses of action. Journal of Applied Psychology,77(4), 419–426.

Singer, D. (2017, October). *We are wrong about millennial sports fans*. Retrieved from McKinsey & Company website: https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/we-are-wrong-about-millennial-sports-fans

Sitkin, S. B., See, K. E., Miller, C. C., Lawless, M. W., & Carton, A. M. (2011). The paradox of stretch goals: Organizations in pursuit of the seemingly impossible. Academy of Management Review, 36(3), 544–566.

Slaughter, J. E., Bagger, J., & Li, A. (2006). Context effects on group-based employee selection decisions. Organizational Behavior and Human Decision Processes, 100(1), 47–59.

Smith, B. (2011, November 2). Katarina Witt wonders where the emotion has gone. *The Globe and Mail*. Retrieved from https://www.theglobeandmail.com/sports/more-sports/katarina-witt-wonders-where-the-emotion-has-gone/article4200100/

Special regulations and technical rules singles and pair skating. (2018). *International Skating Union*, (57). Retrieved from https://isu.org/inside-isu/rules-regulations/isu-statutes-constitution-regulations-technical/special-regulations-and-technical-rules/17927-single-pair-and-ice-dance-2018/file

Gallup Historical Trends: Sports. (2017, December). Retrieved from Gallup website: https://news.gallup.com/poll/4735/sports.aspx

Sutcliffe, K. M., & McNamara, G. (2001). Controlling decision-making prac-tice in organizations. Organization Science, 12(4), 484–501.

T.K. Das, B. Teng Between trust and control: developing confidence in partner cooperation in alliances, Acad. Manag. Rev., 23 (3) (1998), pp. 491-512

T. DeZoort, P. Harrison, M. TaylorAccountability and auditors' materiality judgments: The effects of differential pressure strength on conservatism, variability, and effort Accounting, Organizations and Society, 31 (4–5) (2006), pp. 373-390

Tabb, M. (2018, February 16). The science behind Olympic figure skating's most dangerous and incredible feat. *Quartz Magazine*. Retrieved from https://qz.com/1208802/olympics-2018-figure-skating-is-all-about-the-quadruple-jump-despite-its-dangers/

Tetlock, P. E. (1985). Accountability: The neglected social context of judgment and choice. *Research in Organizational Behavior, 7,* 297-332.

Tiwana, A. and Keil, M. (2009). 'Control in internal and outsourced software projects'. Journal of Management Information Systems, 26, 9–44.

W. Ouchi Markets, bureaucracies, and clans**,** Adm. Sci. Q., 25 (1) (1980), pp. 129-141

Whittington, L. (2002, Feb 24). Back talk: MAILBOX in figure skating, beauty is in the eye of the beholder no accounting for taste. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search-proquest-com.ezproxy.lib.utexas.edu/docview/92198822?accountid=7118

Zakrajsek, T. (2014, November 16). IJS for elite figure skaters only. *Coach Tom Z.* Retrieved from https://coachtomz.com/ijs-elite-figure-skaters/

Zinser, L. (2005, Jan 17). FIGURE SKATING: FINAL NOD TO 6.0 BEFORE SCORING SYSTEM IS DEEP-SIXED. *New York Times (1923-Current File)* Retrieved from http://ezproxy.lib.utexas.edu/login?url=https://search.proquest.com/docview/92973291?accountid=7118

Caroline Hao was born in College Station, Texas on January 25, 1998, and she grew up in Plano, Texas. She enrolled in the Business and Plan II Honors Programs at the University of Texas in 2016, pursuing an additional degree in Management Information Systems. In college, she served on the leadership teams of the Austin Chinese Dance Company and the Longhorn Social Dance club and was heavily involved in campus ministry and Plan Tutoring. She graduated in May 2020 and will join the workforce as a technology consultant.